During this period, birds received federal attention with the passage of the Neotropical Migratory Bird Conservation Act in 2000, which established a five million dollar match grant program to fund projects promoting migratory bird conservation in the United States, Latin America, and the Caribbean.

Photo: Wildlife technician Al Cornell banding ducks.

DNR FILE

Fran and Fred both studied under Aldo Leopold at the University of Wisconsin. In 19[illegible] the following year with a thesis entitled A Study of Wisconsin Prairie [illegible]

Chapter 8

Maturing Profession, 1992-2005 and Beyond

Selected Chronology of Conservation Events Impacting Wildlife Management

1992

Wisconsin DNR initiated a *Deer Hunt* television series hosted by long-time television outdoor program host Dan Small to provide basic information on deer hunting and to answer viewer-generated questions relating to the hunt.

1993

The U.S. Fish and Wildlife Service was led by John F. Turner to 1993, Mollie H. Beattie to 1996, Jamie R. Clark to 2001, Steven A. Williams to 2005, and H. Dale Hall thereafter.

1995

Legislation passed making the DNR secretary part of the governor's cabinet (subject to appointment), ending 68 years of independency under a commission or board.

Wisconsin DNR implemented its portion of a national Watchable Wildlife program.

Wisconsin Biodiversity as a Management Issue was published.

Elk were reintroduced in northern Wisconsin.

1996

Major reorganization of the Wisconsin Department of Natural Resources.

1997

Passage of the National Wildlife Refuge Act.

Bald eagle was removed from Wisconsin's endangered/threatened species list.

1998

DNR FILE

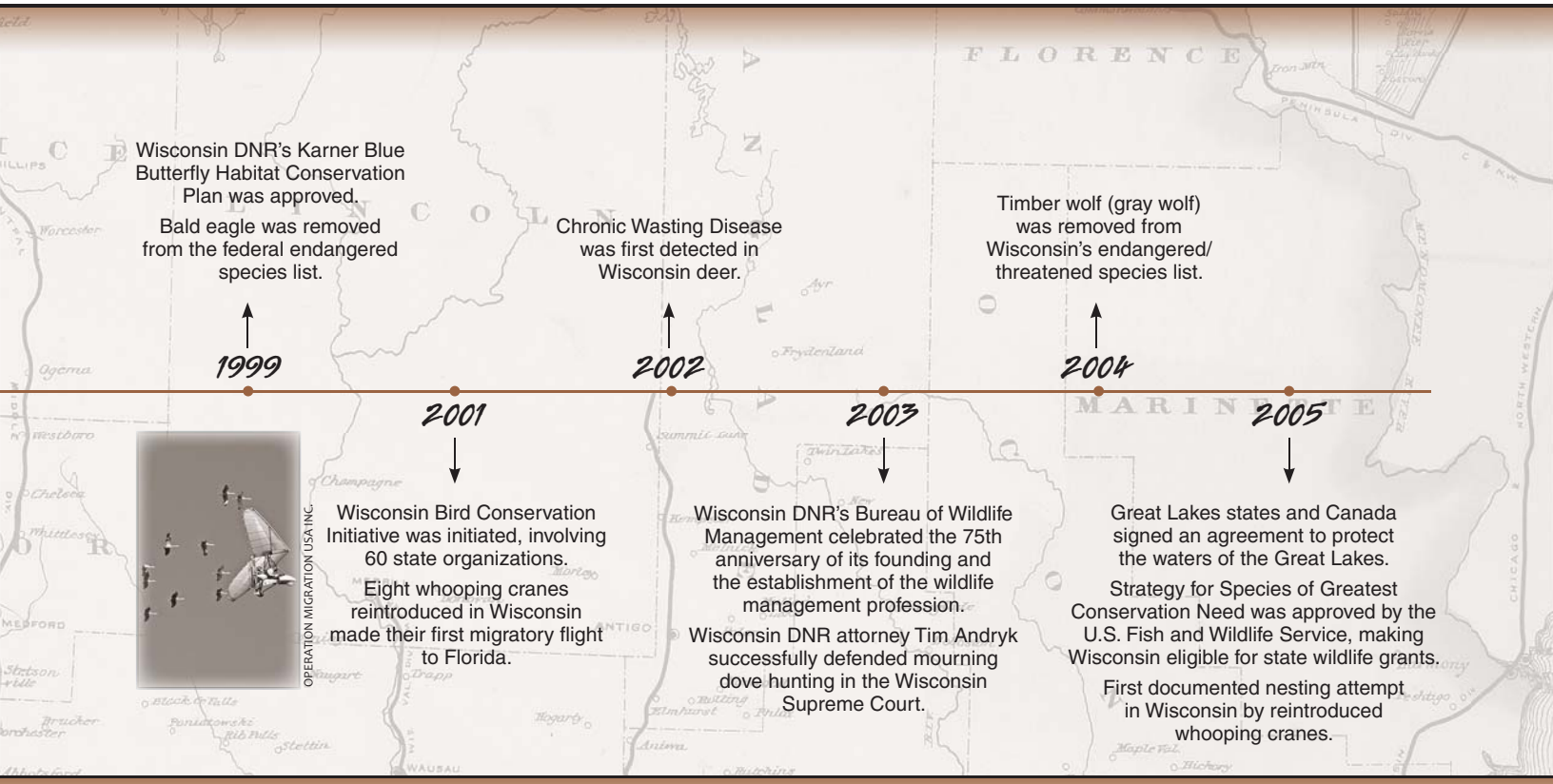
Wildlife Habitat Incentives Program (WHIP) was introduced by the USDA's Natural Resources Conservation Service.

Wisconsin DNR created an automated license issuance system employing computers in replacing a 100-year-old paper license system.

Historical Overview

DNR FILE

- The period began with Bill Clinton serving two terms as the country's 42nd president. George W. Bush was sworn in as the 43rd president on January 20, 2001. During the first term of the Bush presidency, national priorities changed from domestic to foreign, and terrorism became a new worldwide threat.
- Economic conditions nationwide changed with the presidency. The Bull Stock Market shifted to Bear. The American dollar shriveled against the Euro and Japanese Yen. Workers with years of seniority found themselves looking for work as the job market and industrial development dried up. Many businesses failed or downsized their work force in favor of cheap technical labor in India. Corporate fraud, major airline bankruptcies, and overextended home mortgages added to the nation's woes.
- Technological advances in electronics markedly improved communications worldwide. Computer advances, the Internet, Web sites, smaller cell phones, Bluetooth technology, and Vocera voice communication badges brought comic book futuristic depictions to reality. Nano-technology accelerated improvements in biotechnology and other aspects of the industry.
- The cell phone exploded in the market place and was so popular that it became an essential part of American culture. Computers not only offered e-mail for rapid script exchanges but also generated still and motion pictures obtained from sophisticated digital cameras. Live feeds of photographs by cell phone and computer added a new dimension to the communications network.
- Businesses gained not only worker efficiency and accuracy with new technology but also a surprising level of dedication. A 2005 Travelocity poll indicated that 40% of travelers check their work e-mail while on vacation. Further, the poll discovered that about



one-third of the respondents took their cell phones along to stay in touch with their employers, employees, or clients. One person out of four said they brought their laptop on vacation.

- In Wisconsin, Republicans became a majority in the state Senate in 1993 (first time since 1974) and did the same in the Assembly in 1995 (first time since 1970). Tommy Thompson was reelected governor for an unprecedented fourth term in 1998. Tammy Baldwin became the first woman to be elected to the U.S. Congress that same year.
- Tommy Thompson became the secretary of Health and Social Services under President George W. Bush in 2001. Lieutenant Governor Scott McCallum became governor for a short time before former Attorney General James Doyle defeated him in the 2002 election, and Barbara Lawton became the first woman elected lieutenant governor. Doyle was the first Democrat to serve as governor in 16 years.
- Ethics in Wisconsin government became an embarrassing issue in 2001 when a brave state employee, Lyndee Wall, blew the whistle on six legislators for using state funds illegally for election campaign activities. Court action involving felony and misdemeanor charges extended through 2005 and resulted in convictions for all.
- Wisconsin weather garnered national headlines when a record 62 tornadoes hit the state in 2005, including 27 in one day. On August 18, Viola, Stoughton, and other communities rocked by tornadoes tallied one death, 27 injuries, and more than $40 million in damage.
- Economic conditions in the state were tight into the new millennium even though the average unemployment rate was below five percent. Personal income averaged $32,157, slightly below the national average of $32,937, ranking Wisconsin 32nd in the nation.
- In 2005, the price of gasoline exceeded $3 per gallon as crude oil passed $70 a barrel in 2005; $100 a barrel oil was forecasted. Hybrid automobiles touting fuel economy were in demand, and SUV sales dropped. Oil exploration in wildlife refuges in Alaska drew controversy.
- The U.S. population had exceeded 296 million by 2005, and Wisconsin's population had grown from 4,891,769 in 1990 to 5,532,955 in 2004, about 13% growth.

The Gamekeepers

DNR FILE

This time period began with the election of Bill Clinton as the 42nd president of the United States and ended with George W. Bush as president. Under President Clinton, former Arizona governor Bruce Babbitt became the 47th secretary of the interior and served from January 22, 1993, to January 2, 2001. Babbitt, an avid conservationist, worked with President Clinton on the designation of 22 new national monuments and on new environmental initiatives such as the Roadless Area Conservation Rule to protect the last areas of wild national forests (about 60 million acres) from road building, logging, and development.

President George W. Bush, whose energy plan emphasized oil exploration and new construction of coal and nuclear power plants, selected Gale Norton, once an attorney for Delta Petroleum and an advocate of industry's "right to pollute," to succeed Bruce Babbitt as secretary of the interior. Norton drew the wrath of many environmental organizations when she opened up national wildlife refuges to oil exploration. The Bush administration and the Republican majority focused their attention on improving the business and industrial climate by eliminating or weakening environmental laws. The new direction frustrated conservationists and drew the criticism of many environmental organizations.

In Wisconsin, Governor Tommy Thompson supported 1995 Wisconsin Act 27, which changed 68 years of conservation tradition by adding the DNR secretary to the governor's cabinet. This new law created the authority for the governor to appoint the agency secretary rather than the secretary serving at the Natural Resources Board's discretion. Coupled with the continued listing of top-level administrator positions as unclassified employees (not protected by Civil Service Classification), much of the public believed appointments would influence agency policy and program direction.

Thompson also dissolved the Public Intervener's office in 1995 and angered environmentalists statewide. The Public Intervener had been the only public agency serving as a watchdog over public utilities and industries to guard against environment abuse. Getting rid of this office coupled with gaining control of the DNR appeared to be a calculated move to accelerate industrial and business growth over natural resource protection objectives.

The 1996 Farm Bill authorized significant wildlife habitat improvement measures beyond the ***U.S. Department of Agriculture's (USDA)*** Conservation Reserve Program by implementing the ***Environmental Quality Incentives Program (EQIP)***. Millions of dollars of cost-sharing were offered to each state to assist farmers and ranchers in conserving soil, water, wetland, and wildlife on their properties.

The National Wildlife Refuge System Improvement Act of 1997 amended the 1966 Act and strengthened the mission of refuges, clarified the compatibility standard for public uses, and required completion of comprehensive plans for every refuge.

The USDA's Natural Resources Conservation Service introduced the Wildlife Habitat Incentives Program in 1998. Its purpose was to create, maintain, or restore

U.S. Department of Agriculture (USDA)
A federal agency whose mission is to "provide leadership on food, agriculture, natural resource, and related issues based on sound public policy, the best available science, and efficient management" (mission statement), using the following major areas:

1. Natural Resources and Environment
2. Farm and Foreign Agricultural Services
3. Rural Development
4. Food, Nutrition, and Consumer Services
5. Food Safety
6. Research, Education, and Economics
7. Marketing and Regulatory Programs

Environmental Quality Incentives Program (EQIP)
A voluntary conservation program for farmers and ranchers administered by the Natural Resources Conservation Service that promotes agricultural production and environmental quality as compatible national goals.

wildlife habitat on private and tribal lands and on certain public lands by providing financial incentives to landowners. Ten-year contracts were offered to conservation-minded citizens to address habitat needs of state species of concern.

In 1999, wildlife biologists picked up 311 dead birds in Lake Erie that had been killed by Type E botulism. The number of dead birds found exceeded 8,000 the next year and many thousands since as the disease was detected throughout the Great Lakes. The toxin spread from Lake Erie to Lake Ontario, then from Lake Ontario to Lake Huron over the next five years. Lake Michigan was hit hard in 2006 when up to 8,500 birds involving over 50 species were found on about 100 miles of shoreline.

Birds received federal attention with the passage of the Neotropical Migratory Bird Conservation Act in 2000, which established a five million dollar match grant program to fund projects promoting migratory bird conservation in the United States, Latin America, and the Caribbean.

A 2001 U.S. Supreme Court ruling struck an injurious blow to wildlife. The judges voted 5-4 in favor of the Solid Waste Agency of Cook County, Illinois, to fill in wetlands without a permit. The effect was to remove the Army Corps of Engineers' authority over isolated wetlands. Negative impacts on wetland protection and the Clean Water Act were felt across the country, although several states including Wisconsin quickly established their own protective laws.

Global climate change theories turned out to be real. Pollutants were, in fact, impacting the atmosphere and causing a rise in the earth's temperature. The higher temperature, in turn, was melting the polar ice cap, warming the oceans, and affecting weather patterns. The sun's rays—normally reflected by snow and ice—were being absorbed at a higher rate by water and compounding the warming trend. Hurricanes seemed to be occurring earlier in the year and with more intensity. Unseasonable hot and cold weather became the standard forecast.

Climate change appeared to be stimulating unprecedented levels of disease outbreaks. More than 30 new diseases had emerged since the 1970s including AIDS, Ebola, Lyme disease, and SARS (severe acute respiratory syndrome). As tropical forests disappeared, more mosquitoes were produced, and warmer temperatures apparently allowed mosquito-borne diseases like malaria to move into southern Europe and the United States.

An upsurge of violent weather in 2005 had experts concerned that global climate change could upset weather patterns and be devastating to people and the environment. Wisconsin was hit by 27 tornadoes in a single August day. Two category four hurricanes hit Louisiana, Mississippi, and Texas in September 2005, killing over 1,000 people and causing billions of dollars of damage as well as political fall-out because of inept federal government aid.

The Endangered Species Act came under attack nationally in 2005 when legislators from both sides of the aisle began to question its effectiveness. Some felt the entire system should be scrapped because they believed that few species benefited from the

DNR FILE

Important Conservation Leaders Pass Away

Sadly, Wisconsin lost some conservation stalwarts during this period. **George Vukelich**, author of *North Country Notebook*, died on July 9, 1995. His strongly worded articles defending the environment were frequently published throughout Wisconsin. Known for his hard-hitting attacks on those opposed to good conservation, he chastised Governor Thompson in a July 7, 1995, *Isthmus* article under the headline "Something Stinks in Madison—Governor Thompson Deserves a Dead Fish for His Environmental Policies."

Carroll D. Besadny, 69, died on March 16, 1999. The popular DNR secretary (known as "Buzz") headed up the agency for 12 years and earned his reputation as a good bureaucrat by being cool under fire and having a great sense of humor. The *Wisconsin* magazine of *The Milwaukee Journal* dubbed Besadny Wisconsin's "Father Nature" in a 1988 article and the title stuck. The article categorized him as "Wisconsin personified, a solid citizen who tells homey stories about himself, thinks before he talks, takes his time to consider all sides, then makes up his mind, digs in, and holds his ground." Besadny was elected to the Wisconsin Conservation Hall of Fame in 2008.

Outdoor writer **Jay Reed** died on November 8, 2003. Reed had contributed 40 years of thoughtful columns about fish and wildlife and was a staunch supporter of ethics in the outdoors. A memorial plaque was installed in his name at a Mississippi River boat landing above Nelson, Wisconsin, where he and his old dog companion, Thor, had spent a lot of time together.

Gaylord Nelson died on July 3, 2005. He had served in the Wisconsin State Senate (1949–59), as governor (1959–63), and as a U.S. Senator (1963–81). The nation mourned the loss of the Earth Day founder who was said to be one of the strongest environmentalists since Teddy Roosevelt. Wisconsin paid tribute to him at a formal ceremony at the state capitol, and news media coverage of his accomplishments and strong conservation leadership continued for several days.

Attorney **Francis W. "Bill" Murphy** died on December 25, 2005. Murphy served 47 years on the Conservation Congress, 22 as its chair. While outspoken and controversial during his tenure, his dynamic personality and commanding presence elevated the organization into the limelight. His leadership style may have been too forceful and crude at times, but few would question his dedication to the hunting and fishing community.

Former Conservation Department director **Lester Voigt** died on December 30, 2005, at 90 years of age. He had directed the agency for 22 years and survived seven governors. Although he led the old WCD into the new DNR under the Kellett reorganization, many will remember him by the court decision bearing his name that allowed the Lake Superior Chippewa to spearfish off-reservation. (He had been named as a defendant in that lawsuit.)

law. Others maintained the law needed to be strengthened. Negative law impacts on business and industry were cited as major deterrents to economic growth.

The U.S. Department of the Interior delighted birders around the world in 2005 when it announced that the ivory-billed woodpecker, long thought extinct, had been found in the Cache River National Wildlife Refuge in Arkansas. The bird had vanished from old bottomland habitat by unrestricted timber harvest that had fragmented the contiguous forest needed for its survival. Intensive searches later failed to confirm the sighting.

The states and Canadian provinces surrounding the Great Lakes struck an agreement in 2005 to clean up these inland waters. Governors and premiers representing this region also signed an agreement in December 2005 that would prevent other states from using this unique resource. The lakes are the largest source of fresh water in the United States, and shortages elsewhere indicated that Great Lakes water could be in demand in the very near future.

The Department of the Interior released an environmental impact statement on its comprehensive management plan for the management of the Upper Mississippi River on May 1, 2005. About 3,000 people attended 21 public meetings held by the Fish and Wildlife Service, and more than 2,400 written comments were received, many opposing new proposed restrictions including expanded no-hunting areas, shell limits, new fees, and new "no motor" areas. Many proposed restrictions were eliminated or modified in a revised plan released in December.

Wisconsin and other states experienced a suppressed economy that required large-scale budget reductions as deficits exceeded hundreds of millions of dollars. Layoffs were immediate in every state agency. Conditions eased somewhat through 2005, but state-funding limitations continued to suppress conservation programs.

The $250 million Knowles-Nelson Stewardship Fund for land buying was renewed in 1999, extending the fund for another ten years and increasing the funding amount to $460 million. Governor Thompson continued to make his mark by approving unusually large state land purchases. The largest acquisition, known as "The Great Addition," included 32,000 acres of northern forest purchased from Packaging Corporation of America.

Comprehensive planning laws entitled Smart Growth passed in 2000 requiring local land-use actions like zoning, official mapping, and subdivision regulations to be made consistent with comprehensive plans of local governments by January 10, 2010.

Private land preservation efforts in the state increased in the new millennium. Land Trusts and other nongovernmental organizations were very active statewide. Major groups like Gathering Waters, 1000 Friends of Wisconsin, The Nature Conservancy, Madison Audubon Society, and Pheasants Forever increased participation in Knowles-Nelson Stewardship Fund cost-sharing projects protecting thousands of acres threatened by development.

The Managed Forest Law (MFL) was revised in 2004 and 2005 (Act 25), diverting much of required planning from the DNR to "Independent Certified Plan Writers" (consultant foresters). The DNR forester could prepare a plan if no offer was received within 45 days. The fee for such service increased from $100 to $370 plus $5.60 per acre. A $20 application fee was also required.

The Legislative Audit Bureau continued its pattern of frequent audits of the DNR, paying particular attention to environmental

protection programs. Audit reports reveal program shortcomings but also identify operational results and agency strengths. Unfortunately, the public and even legislators are seldom aware that audits occur or learn of agency strengths and weaknesses. For example, while pursuing a chronic wasting disease (CWD) program audit in June 2005, a senior state senator wasn't aware that the Legislative Audit Bureau had just completed a CWD program review in 2003.

In March 2006, the Wisconsin State Legislature passed the Renewable Energy and Energy Efficiency Bill (Act 141), establishing a 10% renewable energy goal by 2015.

DNR Reorganization

Former law enforcement division administrator and attorney George Meyer was appointed DNR secretary in 1993, replacing the retiring C.D. Besadny. As the Republicans took control of both houses of the Wisconsin State Legislature, politics soon reshaped the agency seemingly to reduce a power long thought by some to be too far reaching.

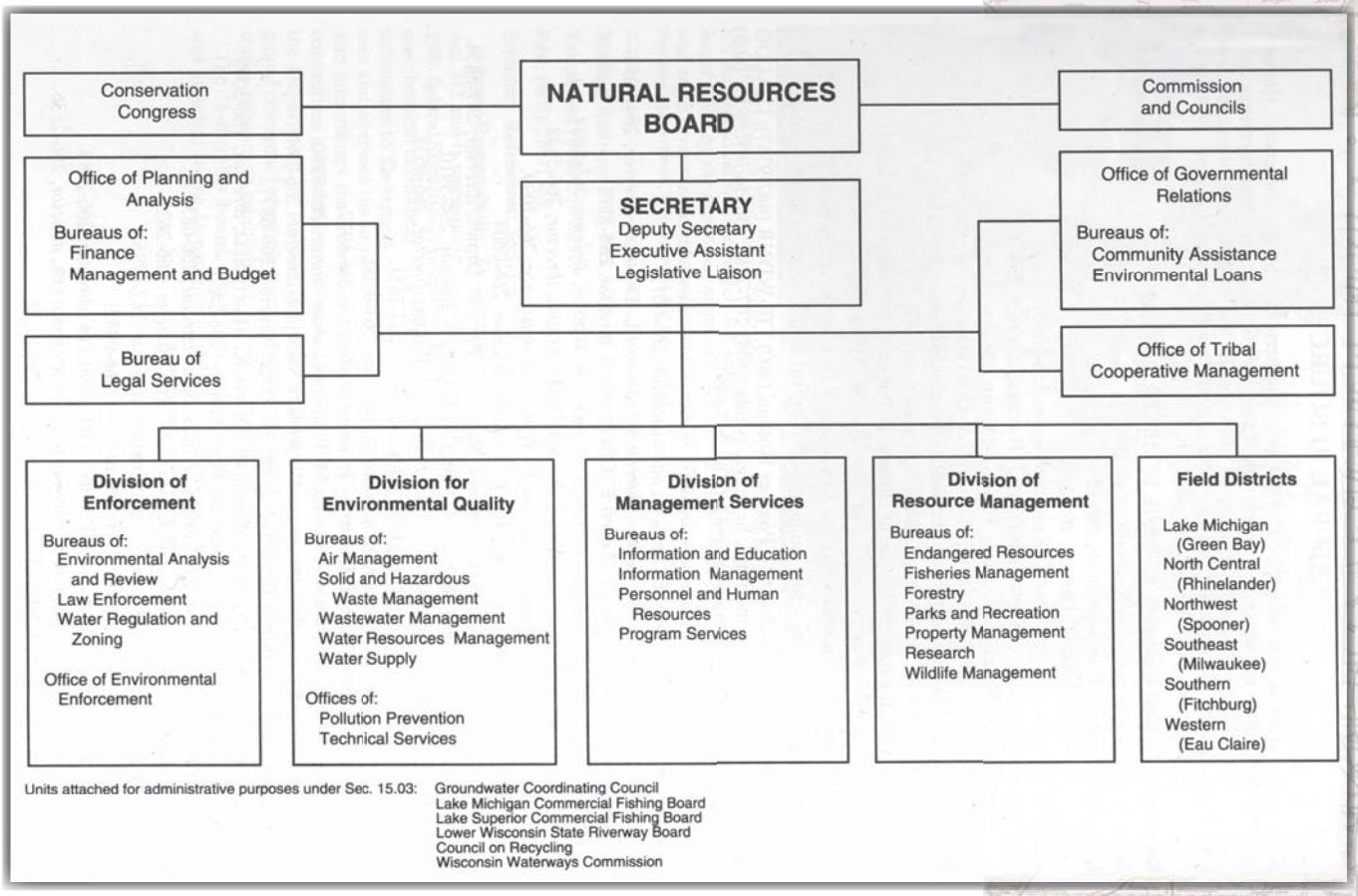
At the start of the decade, the basic agency organization was unchanged with a seven-member Natural Resources Board and their appointed secretary directing the DNR. The Bureau of Legal Services, the Office of Intergovernmental Relations, the Office of Planning and Analysis, and the Office of Tribal Cooperative Management assisted the secretary.

Four functional divisions in the central office directed major field programs: Enforcement, Environmental Quality, Management Services, and Resource Management. Six field districts, each headed by a director who reported directly to the secretary, were located in Fitchburg (formerly named after the City of Madison location, now after the township which incorporated as a city; no change in location), Milwaukee, Eau Claire, Green Bay, Rhinelander, and Spooner.

DNR FILE

George Meyer was appointed secretary in 1993.

Wisconsin Department of Natural Resources Organization Chart, 1993–1994.



Secretary Meyer ordered a study of the agency in 1994 that would have major impact on the organization and employee morale. The private accounting firm of Grant Thornton was hired and took a year to complete the task. A DNR reorganization plan resulted, and the Natural Resources Board approved it in July 1995.

The reorganization plan's vision was "to develop a customer-driven organization for the twenty-first century that optimizes agency staff and financial resources to manage Wisconsin's natural resources on a natural geographic basis in a highly program-integrated manner and in full partnership with others in the public and private sectors." Six major goals were outlined in the reorganization plan:

1. Optimize agency efficiency and effectiveness
2. Increase focus of environmental management on a natural geographic basis
3. Increase integration of programs to better serve customers
4. Bring public and private partnerships into the organizational structure
5. Meet increasing demands on the department's "front line" services
6. Better empower the talented and dedicated staff to "get the job done"

The large number of administrative changes required to implement the new organizational plan took more than two years to complete. Budget cutbacks reduced the base of 3,114 salaried positions to 2,880 after July 1, 1996 (a loss of 234 positions). Decentralization (i.e. transferring central office personnel to the field) was expected to impact 140 people in an effort to get programs closer to the public. Up to 35 new "service centers" were intended to be opened for the purpose of providing better customer license and permit processing service.

The central office was reorganized into six divisions in 1996: Air and Waste, Land, Water, Customer Assistance and External Relations, Administration and Technology, and Enforcement and Science. Six administrative districts were combined into five regions: Northern, Northeast, West Central, South Central, and Southeast. The underlying theme of the new order was to create a department more responsive to the business community and the public.

Service centers were designated at most major DNR offices within the five new regions. Some smaller offices were designated field offices and ceased providing licenses and informational services to the public. Service centers were remodeled to present a public-friendly atmosphere and easy access to information. New computers at the reception desk enabled rapid license and permit issuance as well as immediate information on any natural resources topic.

The most innovative organizational change was the establishment of new leadership channels in the regions and geographic management units (GMUs) in the field based on major watershed boundaries. The rationale for using watershed boundaries made sense for managing natural resources but seemed baffling to the county-oriented public. The idea was to create a definable boundary around an ecologically similar landscape rather than an arbitrary or political boundary line on a map.

The director in each of the five regions appointed leaders in each of the functions of land, water, air and waste, enforcement and science, and the strangely titled divisions of Administration and Technology (office operations) and Customer Assistance and External Relations (general public service). The Land Division included five functions: parks and recreation, facilities and lands, endangered resources, wildlife management, and forestry.

The new organization was as confusing to its employees as it was to the public. Just the change of program and position titles was challenging to comprehend. The familiar Bureau of Research was now merged into a new Bureau of Integrated Science Services. Former Wildlife Research Section personnel found themselves in a new section bearing the obfuscate title of Information Synthesis and Adaptive Strategies Section. Field wardens were located in the Enforcement and Science Division.

Foresters and wildlife biologists (new title) along with respective technicians formerly grouped with their own kind were now assigned to Land Teams and sub-teams with various watershed titles like the Illinois Fox/Root and Pike Team and the Grant/

We trained hard. But it seemed that every time we were beginning to form up into teams, we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing: a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.

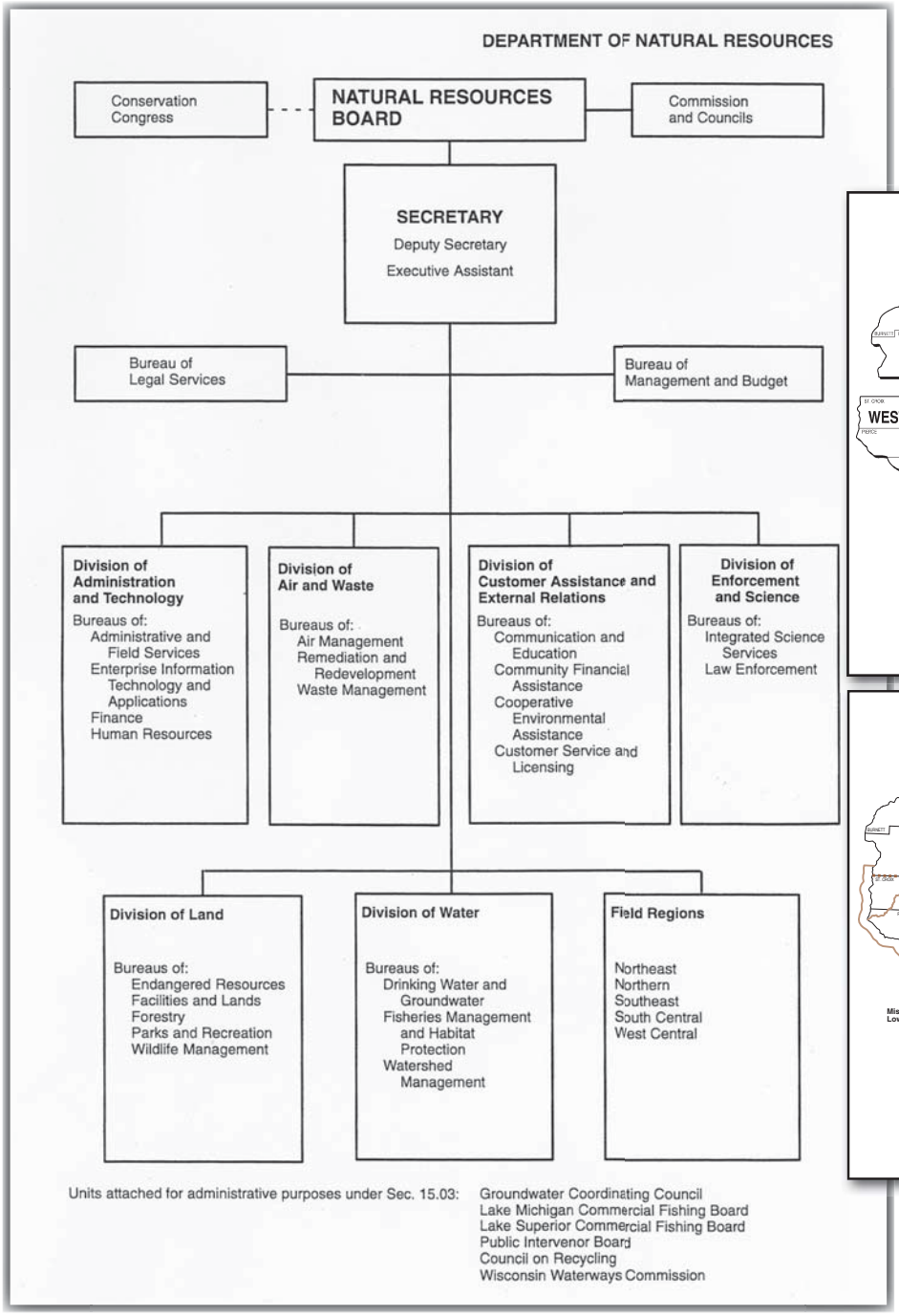
—Petronius Arbiter, 210 B.C.

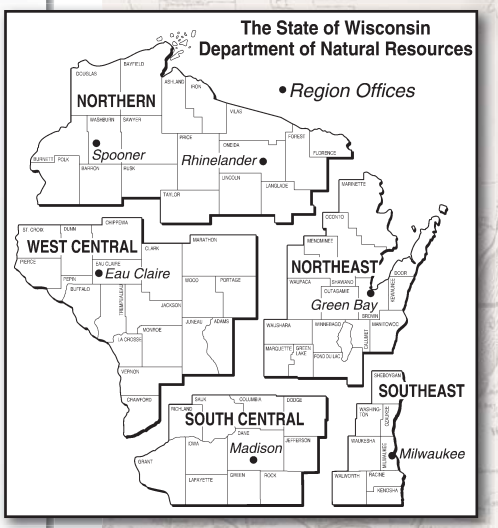
Maturing Profession, 1992-2005 and Beyond

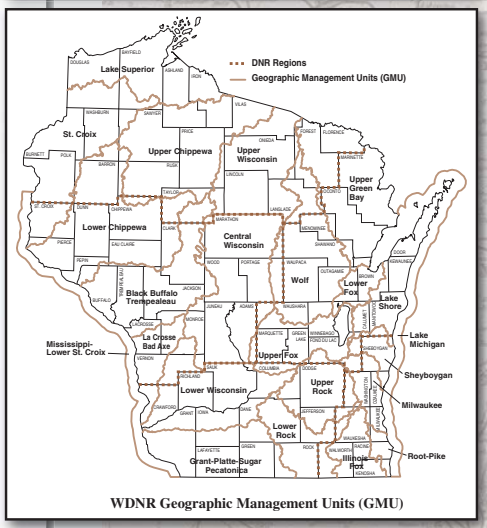
Sugar and Pecatonica Basin Team. Fish biologists were lumped with wastewater engineers and watershed specialists in Water Teams. Wardens remained together in area teams, but park superintendents and rangers were in county or park sub-teams.

New leader appointments tapped traditional programs of experienced senior workers and created generalist administrators that often had little expertise in the functions they were supervising. For example, former park superintendents supervised wildlife biologists, fish biologists, and foresters. Adding another supervisory level was known to delay communications up and down the chain-of-command.

A statewide strategic plan was developed, and each division and bureau initiated strategic implementation plans. These planning steps identified goals and objectives for management consistent with the findings of the Grant Thornton study. It also provided the administration and the Natural Resources Board with an overview of agency program direction.







WDNR Geographic Management Units (GMU)

Wisconsin Department of Natural Resources Organization Charts, 1997-1998.

External partnership teams composed of DNR staff and representatives of local governments, federal agencies, businesses, sports groups, environmental organizations, and interested individuals (all partners collectively called "stakeholders") were formed in each GMU. Public meetings were held at various locations around the state in an attempt to use the partnerships as a consistent sounding board for public views and to solicit broad resource management input into agency programs. Initial efforts in the Lake Michigan Region started out encouragingly but soon degraded into single-issue discussions. Meeting attendance fell off, and the idea was eventually abandoned.

Rumors circulated that the Republican Party was behind the entire reorganization scheme and that Secretary Meyer had implemented it as a political trade-off for keeping his job. Some believed that the reorganization effort was the perfect vehicle for Governor Thompson and his legislative majority to dismantle the agency and neutralize its power. Meyer indicated in staff discussions that he alone was responsible for reorganization. However, he also said that if he hadn't initiated reorganization, somebody else from the Department of Administration probably would have forced the change.

The 1995 law change creating the cabinet form of government by Governor Thompson initially had no noticeable impact on the DNR. George Meyer was firm on environmental issues but appeared amenable to suggestions from the state capital to streamline the service to industry and businesses in a more efficient manner. DNR personnel were hopeful that Meyer could hold the line against political pressure aimed at weakening the agency. Meyer's resistance to major relaxation of environmental enforcement and modification of traditional natural resources management procedures likely impaired his standing with the Legislature. He was forced to fight for his reappointment in 1996 by conducting a massive letter writing campaign soliciting support for keeping his job.

One fact was very clear in the late 1990s: The DNR was a markedly changed organization. Service to the public may have improved, but traditional fish and game programs appeared to be less visible. How effective the new system really was would not be known for some time.

In 2001, some legislators introduced a bill to split the agency into three separate departments (likely to dilute the DNR's authority). The proposed departments were: conservation (fish, wildlife, and parks), forestry, and environmental protection. The environmental community reacted with vigor, and the Conservation Congress led the charge with busloads of protesters at the public hearing. The proposed legislation never made it out of committee.

The fervor at the capitol probably influenced the DNR to do something about the "split the agency" issue. Forest industry support led the administration to restructure the Forestry Bureau into a division of its own later in 2001 as an alternative to creating a separate agency. New bureaus within the new Forestry Division were Forest Protection, Land Management, Forest Administration, and Forest Sciences.

DNR Progress

Technology impacted the DNR significantly during this period. Computer availability along with technical support expanded from central office use to every level in the field. Cell phones also increased in availability and use. This combination of innovations improved communications tenfold but were costly to purchase and maintain.

The Bureau of Information and Education began to post press releases on the Internet in August 1994. The DNR was able to create their own Web site by February 1996, and the public suddenly had access to information from every major program in the agency from their homes. License sales and campground reservations also became available on-line.

The Automated License Issuance System (ALIS) was created in 1998 after years of study and countless attempts to advance DNR's 100-year-old system of issuing paper licenses through an expensive, labor intensive, hand-issued process. This versatile computer-generated system enabled DNR offices and private business venders to issue any type of license requested complete with stamp authorizations, game carcass tags,

DNR FILE

Computers enabled the DNR to significantly improve public service after 1994.

and deer hunting back tags. A durable, waterproof, compact license was issued to the individual along with a personal lifetime customer number.

The ALIS completely revolutionized how the DNR issued licenses and collected revenue. The pilot program was tested in October 1998 and was followed by statewide use on March 10, 1999, at 34 DNR service centers and over 1,500 private vendors. The system proved almost flawless in issuing 236 different license types totaling more than 4.2 million licenses issued to over 1.6 million customers that year. (207 different licenses totaling about 3.5 million licenses sold to over 2.1 million customers were recorded for the April 2007–March 2008 period, generating $73 million in revenue.)

There were downsides to the computer technology story. Some employees were intimidated by it and simply refused to learn how to use it. Those individuals soon found themselves somewhat isolated. As computer time increased for many, human interaction decreased, taking away an important level of input for ideas as well as a camaraderie factor vital for morale. As importantly, huge amounts of program activity and accomplishments were lost from the historical record by a simple push of the delete key.

Environmental Programs

Environmental programs continued to improve the quality of the environment and enhanced living conditions in the state. Even though about $62 million was spent in Fiscal Year 1993–94 on solid waste, water resources, air quality management, wastewater treatment, and water supply programs, field staffing was woefully shorthanded on all fronts.

Water regulation and zoning specialists—key personnel for most local permits involving wetland alterations—faced huge backlogs of permit applications, many involving controversy and court action. Wastewater engineers and public water specialists were equally behind with large workloads and funding cutbacks on the horizon. The long time lag for administrative reviews of permit applications by a cumbersome bureaucracy generated constant public complaint and frustrated the overburdened field staff.

Legislation in 1997 required more than 153 municipalities to develop plans to control runoff. By 2000, the department was spending $65 million each year on runoff control alone. In that same year, the DNR awarded $7 million to 43 municipalities to improve local waters degraded by runoff pollution. Smart Growth legislation generated funding that enabled numerous local land planning efforts.

A rejuvenated national dam removal program topped the 700 mark in 2001 and was widely touted for restoring natural water flows, improved water quality, fishing, and associated recreation. Wisconsin had been an active participant in that effort since 1967 and removed the last four dams on the Baraboo River in 2001. Other dams were planned for removal on Deerskin Creek and the Sheboygan, Iron, and Prairie rivers.

Mercury contamination became a new concern with power plant emission control regulations initiated in the new century. Health advisories for people eating valued game fish were now a standard educational effort. Generally, pregnant women and young children were warned about eating any legal-sized game fish in Wisconsin. Plans for cleaning up PCB-laden sediment in the lower Fox River and Green Bay were under discussion.

Environmental programs were effective into the new millennium, but national economic conditions severely reduced federal funding sources and impacted employment levels. Wisconsin's Jobs Creation Act of 2003 seemed grossly misnamed because its primary effect was to eliminate regulations for air quality management and fisheries habitat protection to speed up the permit process for business and industry.

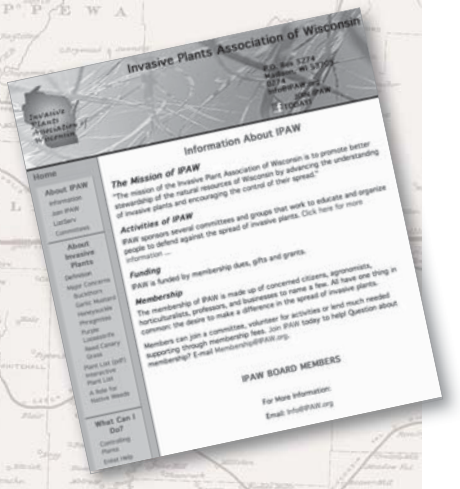
DNR studies revealed that home-site development alongside lakes and rivers in the past 30 years equaled or exceeded the development experienced the previous 100 years. The agency initiated strengthening shoreline regulations in 2002, but controversy prevented adopting new rules through 2005.

A "Northern Initiative" started under Secretary Meyer was promoted for the DNR to work with northern communities to assist them with industrial and residential

DNR FILE

Devices used to control runoff from agricultural or construction sites.

DNR FILE



DNR FILE

growth. The program was designed to keep northern Wisconsin natural and attractive while accommodating development opportunities. Scenic lakeshores, uncluttered woodland, and silence are the foundation to sustainable tourism and living quality. Development had been eroding this foundation in recent years, and assaults on shoreline protection rules in 2005 by realtors and legislators reflected a growing trend to challenge most things the DNR does with regulations impacting the riparian landowner.

A Wild Lakes and Shorelines Protection Project coordinated with partners to permanently protect almost 15,000 feet of fragile shoreline. A Forest Legacy Project used federal funds to buy partial development rights and access on 72,000 acres of forestland.

A Wisconsin Lakes Partnership created the previous decade had the DNR working collectively with the Wisconsin Association of Lakes, lake districts, shoreline landowners, recreation enthusiasts, and the University of Wisconsin-Extension. Water quality monitoring, education, exotic species control, and lakeshore protection are the main goals of the program. On average, over 600 participants attend the group's annual Wisconsin Lakes Convention.

Establishing new pier rules created controversy in 2005. The DNR staff attempted to limit the size of piers after discovering some piers were so large that they were infringing on the public's water rights and having significant negative effects on lake vegetation and associated fish life. The Natural Resources Board approved rules that would exempt 85% of existing piers from a permit procedure, but opposition at the legislative level delayed new rules from being established.

Invasive Species Control

An outright war with invasive species was launched in the state in the new millennium with more than 20 exotic plants, shrubs, vines, and trees identified as specific targets. A Governor's Task Force on Invasive Species allocated $300,000 to the effort in 2000.

An Invasive Plants Association of Wisconsin (IPAW) was formed, consisting of garden club members, highway maintenance personnel, nature centers, and various land managers including several DNR personnel. Kelly Kearns on the Bureau of Endangered Resources staff developed unique expertise on invasive species and led the department effort to educate the public on the problem as well as directed field activities involving eradication objectives. Other new conservation battlefronts opened on gypsy moths, educating the public on ticks and Lyme disease, as well as testing birds to document the spread of West Nile virus.

One of the most bizarre wildlife invasions ever recorded occurred in 2003. A local concentration of feral hogs was reported to be causing problems in Vernon County. While appearing humorous to some people in the news coverage that followed, it soon became apparent that hogs could be devastating to the environment and that big boar hogs could be very dangerous to humans. Because they were classified as unprotected species by law, hunters were encouraged to control the problem.

Law Enforcement

Law enforcement experienced historical increases to their staff. The number of conservation wardens rose from 173 in 1982 to 181 by 1992. Mandatory warden training was increased to 810 hours in 1998, and staff numbers climbed to 209 wardens. However, the staff was reduced to 203 positions in 2005, which, combined with up to 30 position vacancies, significantly handicapped the program.

Fisheries

Fish harvest was tightened up using reduced bag limits and increased size limits on game fish. Anglers complained of rule complexity, but quality of the sport was improved, and larger fish in the bag eventually improved angler attitudes. A 2001 survey of Wisconsin anglers indicated bluegills were the most popular game fish followed by yellow perch and crappie, respectively.

The program's 13 hatcheries and rearing stations produced over 11 million fish, and state fisheries land ownership exceeded 120,000 acres. The public land base coupled with 15,000 lakes and 44,000 river miles now provides more than 22 million

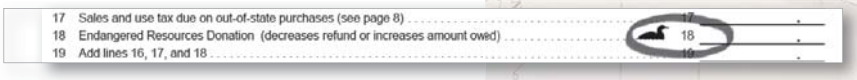
days of public fishing, producing almost 70 million fish in the creel. Economic impact topped two *billion* dollars.

Parks and Recreation

State recreational facilities grew to 45 state parks, ten state forests, 12 state trails, and four recreational areas. Over 500 state fishery and wildlife properties offered additional opportunities for a variety of recreational pursuits in addition to hunting and fishing.

Endangered Resources

Primary funding for the protection and management of endangered, threatened, and special concern species continued to come from taxpayers through volunteer donations (tax check-off), which reached record levels in 1992–93 when taxpayers donated $660,000 to the fund. The tax check-off program continued to generate more than $500,000 each year for the rest of the decade. (Endangered resources accomplishments are discussed in Chapter 10.)



Forestry

Wisconsin sent 280 individuals, ten initial attack 4x4 engines, and two tractor plow units out of state to assist in fighting wild fires in the western United States in 1994. Most fire fighters served 21-day deployments. It was the largest out-of-agency mobilization ever made by Wisconsin and generated a $1.4 million reimbursement from the U.S. Forest Service.

The forest management program celebrated its 100th anniversary in 2004, touting forestry as one of the top three employers in Wisconsin in 42 of 72 counties. Wisconsin led the nation in production of paper, children's furniture, and millwork. Wisconsin was also among the top producers of maple syrup and Christmas trees. Sixteen million acres of forest provided over two million people a variety of outdoor recreational opportunities.

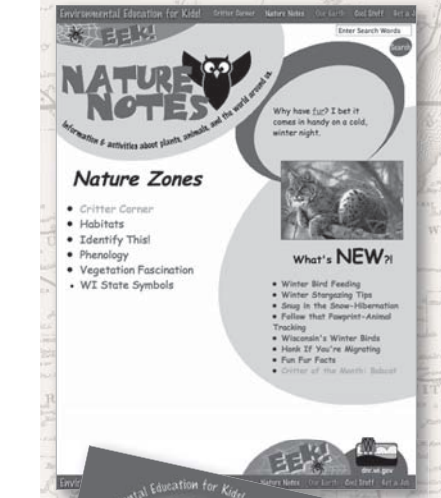
With more than two million acres enrolled under the Managed Forest Law (MFL) and almost one-half million acres enrolled under the old Forest Crop Law, additional foresters were hired to improve landowner service. Forestry education, urban forestry, gypsy moth suppression, and grants to promote sustainable practices on county forests were also pursued. Mill tax funds were audited in 2004 to ensure they were being used properly.

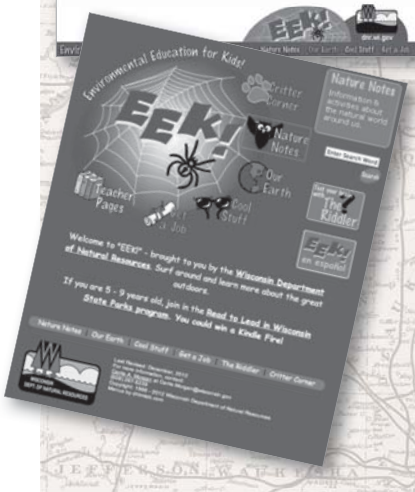
As public interest has grown in managing land in the best possible manner, sustainable forestry became an issue affecting the global timber economy. Growing and harvesting timber without harming the environment (sustainable forestry) have become criteria for people buying forest products. Failure to demonstrate that the timber products were "certified" (i.e., produced by sustainable forestry) resulted in lost sales. Wisconsin's entire 512,000-acre state forest program was certified to meet the special criteria in 2004. The two million acres of forests under the MFL program were certified in 2005.

Environmental Education

Information and education programs were standards within most bureau-level operations. MacKenzie Environmental Education Center's school programs were still very popular and attracted over 20,000 students each year, but budget cuts forced the DNR to reduce the Center's staff and consider closing the facility in 2005. Fortunately, the Wisconsin Wildlife Federation had an interest in establishing its headquarters at such a location, and an agreement was struck in November for them to take over the Center's educational programs along with the Friends of MacKenzie organization.

The Environmental Education for Kids program (entitled *EEK!)* provided class materials and a Web site enabling school children to research science papers, learn about careers, or just read about Wisconsin plants and animals. Over 40,000 students logged on to the site monthly early in the program, but that number surpassed 240,000 user sessions and an incredible three million hits monthly in 2005. One person—Carrie Morgan (wife of wildlife manager Mike Foy)—ran the entire program with assistance from Janet Hutchens.





Formal school curriculum offered by Project WILD, Project Learning Tree, and Aquatic Education were in their second decade of use, and teacher workshops continued to be in demand. Staff losses because of budget reductions eliminated most educational support positions in the central office, but materials were still provided to program participants.

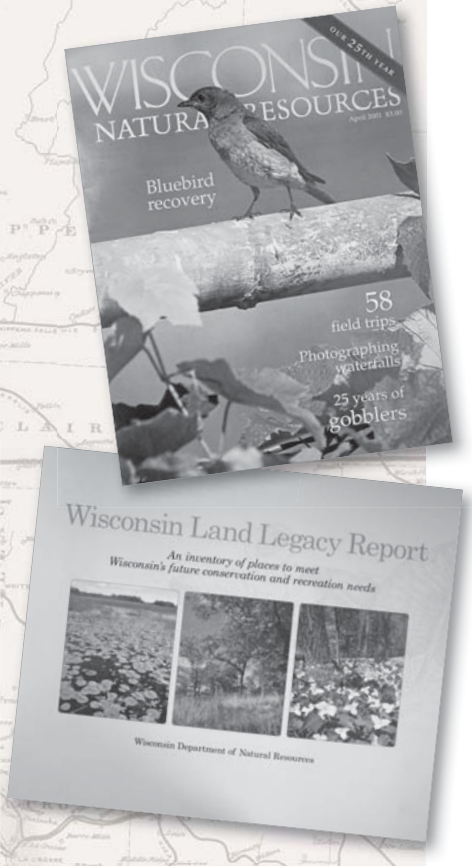
The DNR's *Deer Hunt* series on Milwaukee and Madison Public Television, hosted by Dan Small, became a highly watched program beginning in 1992 and continues each fall. Broadcast just before deer season opens, the annual program features wildlife biologists answering questions about the upcoming gun deer season and explaining the principles of the DNR management program. The viewing audience numbers in the hundreds of thousands and removes any excuse by anyone claiming to be uninformed on anything relating to white-tailed deer.

Wardens began to teach conservation statewide in 5th grade classes in 1994. The Bureau of Law Enforcement's nationally acclaimed hunter safety program involved over 4,000 trained volunteer instructors by 2005. Similar programs continued for all terrain vehicle, snowmobile, and boat safety. More than 54,000 students were trained in these programs in 2004 with similar results in 2005.

The Sandhill Outdoor Skills program was also in its second decade of existence, and its programs, led mostly by a one-person staff (Dick Thiel), encouraged hands-on experiences for youth participants including learn-to-hunt programs for deer and waterfowl, trapper education, camping, and outdoor survival among others. Nature centers at Crex Meadows, Mead, Horicon, and Navarino wildlife areas, Havenwoods State Forest, MacKenzie Environmental Education Center, and numerous state parks contributed to a substantial conservation education effort.

The DNR's *Wisconsin Natural Resources* magazine celebrated 65 years of its existence in 2001 with a circulation of more than 115,000 annual subscriptions. The *DNR Digest*—initiated in the 1970s to keep DNR employees informed of various newsworthy items—went out of production the summer of 2003 as a cost-saving measure. Selected information continued to be provided to staff through the agency's intranet Web site, "My DNR".

Educational efforts included *Into the Outdoors,* a television program created through a DNR partnership with Discover Wisconsin Productions and aired on public television in 2002. Shown on weekend mornings, *Into the Outdoors* encouraged kids to explore the outdoors and learn about the environment. However, the high cost ($250,000 per year) caused the agency to abandon the program after just three years.



Land Control

The department released a massive land acquisition study in 2005, completed at the request of the Natural Resources Board to finally answer a question that had been raised by legislators for years: "How much land is enough for conservation?" The DNR staff spent almost five years looking at land, analyzing 16 ecological landscapes, and conducting public meetings to answer that question. The final result, entitled *The Wisconsin Land Legacy Report*, identified 229 "Legacy Places" in the state believed to need protection over the next 50 years.

The Knowles-Nelson Stewardship Program enabled the DNR's land ownership to increase to almost 1.4 million acres by 2005. The program came under two sharp attacks by the Legislature, requiring the governor's intervention. The first effort was an attempt to eliminate the program entirely. The second proposal required the DNR to spend $80 million purchasing 77,755 acres of land already under public ownership (Board of Commissioners of Public Land). The governor vetoed both proposals.

Legal Services

After 30 years as chief legal counsel, James Kurtz retired and was replaced by Richard Prosise. Ten new attorneys had been added to the staff since 1984. Other retirements by senior staffers put the total staff at 19 people through 2005. The legal staff was located on the same floor as the DNR secretary, reflecting the close association it had with all major agency programs. Environmental law, traditional fish and game

regulations, Indian Treaty compliance/negotiation, and myriad DNR policies required full-time attention by the legal staff.

Reduced Work Force

The DNR lost more than 300 employees because of budget restrictions in 2003 and 2004. Some losses were absorbed by retirement vacancies, but holding key positions vacant for long periods of time had a suppressing effect on a number of programs. Direct layoffs became necessary in some cases to comply with mandates imposed by the governor.

Leadership Change

The DNR secretary was a member of the governor's cabinet and subject to appointment at any time after the 1995 law change. Ironically, Governor Thompson—who was in office when the law was created—never exercised that privilege. After he left office late in 2000, his replacement (Scott McCallum) used the authority immediately. Newspapers announced that Governor McCallum had removed George Meyer as DNR secretary in February 2001. Darrell Bazzell, 42, was appointed in his place. Political onlookers described the move as "McCallum stepping out from behind Thompson's shadow and finding appointees that match his own management style."

Bazzell had been the head of DNR's Office of Planning and Analysis from 1993 to 1996 and had been deputy secretary for the previous four years. While he initially didn't get a very warm reception from DNR employees, his friendly mannerisms and job sincerity quickly gained their confidence and support. His decision making appeared to strongly back environmental protection.

Bazzell was very much aware of the agency's morale problems caused by the 1996 reorganization and the constant attacks by the Legislature. He immediately reorganized most of the line-staff channels to restore traditional supervision and communication channels, but the basic Geographic Management Unit structure remained in place for the Water Division.

Meyer remained with the DNR for a short time before retiring. He raised eyebrows when a *Wisconsin State Journal* interview revealed that a powerful state Democratic senator had threatened his secretarial appointment if the proposed Exxon copper mine decision didn't go a certain way. The candid interview indicated Meyer had remained true to placing priority on environmental protection over job survival. Meyer also spoke out against the secretary serving on the governor's cabinet, observing that "someday, there will be a governor and a secretary who will cross the line with this system.… There would be ways for a secretary to influence a decision, and nobody would ever know. It could be done without any kind of trail."

At the press conference announcing his job loss, Meyer called for a return to the pre-1995 state law that allowed the Natural Resources Board to appoint the secretary: "To maintain public confidence in our natural resources programs and to maintain the morale and the reputation of the department's resource professionals, there must be a return to a board-appointed secretary system."

Another Leadership Change

Before Bazzell got too comfortable in his new position, James Doyle took over as governor after the November 2002 elections and immediately replaced Bazzell with P. Scott Hassett. Bazzell was later appointed vice-chancellor at the University of Wisconsin-Madison.

Doyle had campaigned to eliminate the DNR secretary from the governor's cabinet appointment authority but apparently changed his mind after his election because no change took place. The leadership disruption at the DNR did little to improve employee morale. Doyle also pledged to reduce the number of state employees by 10,000 over eight years, and the reductions started immediately (he later modified that pledge).

Scott Hassett, then 52, was an attorney and partner at the law firm of Lawton and Cates. Senior partner John Lawton, now deceased, had previously served three


DNR FILE

Darrell Bazzell was appointed secretary in 2001.


DNR FILE

Scott Hassett was appointed secretary in 2003.

terms on the Natural Resources Board. Hassett seemed an ideal fit to head the agency because he was an avid hunter and angler and had handled environmental litigation on a statewide basis. He was a member and former chair of the Natural Resources Foundation of Wisconsin, and his dad had worked for Gaylord Nelson, exposing Scott to a sound environmental ethic.

Starting what he called his "dream job" on January 6, 2003, Hassett faced some horrendous challenges. The slumping economy and large state budget deficit forced all state agencies to enact deep program cuts and employee layoffs. A serious disease was impacting the deer herd, and environmental permitting programs were under fire. The DNR employee morale was not the best, and being the new kid on the block hampered Hassett's ability to improve the situation very quickly.

One of the first changes the new secretary implemented was to establish a DNR feedback line designed to allow the public easier access to comment on DNR service by telephone. Many agency employees objected strenuously, claiming the new communications would just create an avenue for complaints. Hassett disagreed and was confident he could demonstrate that positive comments far out-numbered negative comments. The feedback service was reasonably received by the public and seemed to function well. The complaint volume proved to be meager.

The DNR had gone almost a decade without a major license increase in 2005, and a deficit of $20 million was projected by 2007. The slumping economy didn't help prospects, and ongoing austerity efforts created a bleak outlook for fish and wildlife license-supported programs. Despite months of publicity on the DNR's financial shortfall and proposed fee increases, the Republican-controlled Legislature remained tight-fisted and approved a reduced version of the recommended license increases.

The deer license was increased four dollars instead of the $12 proposed by the DNR and represented a significant portion of the budget shortfall. To make up some of the difference, legislators proposed a one-time transfer of segregated stamp funding from waterfowl and turkey programs as well as trout and salmon fishery programs. This was an unprecedented action by lawmakers because hunters and anglers paid those special fees earmarked to improve habitat in those specific programs. The volume of complaints received at the state capitol was large enough to have the unpopular proposal withdrawn.

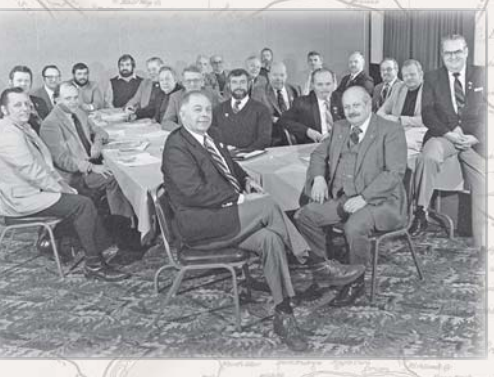
When some legislators proposed eliminating five senior regional (field) law enforcement positions as a cost-savings measure, the unexplained rationale drew speculation. Some suggested it was simply a concerted effort to discipline the program for some law enforcement action against an important state business. Others said it was a mistake because legislators thought they were eliminating central office positions. The proposal was withdrawn without public explanation.

Conservation Congress

The Conservation Congress continued to operate much like it had for the last 20 years under Bill Murphy's leadership. While they periodically gave important support to the DNR, they still hadn't learned that they were advisory to the Natural Resources Board and not the Legislature. Further, it appeared the members had no understanding of the citizen participation principle that "advice is not advice if it has to be taken."

The negative image of the Conservation Congress was attributed to its leadership, not its members. In general, its membership has always been composed of sincere, dedicated outdoor enthusiasts who donated considerable time and money to the cause of conservation. Many of the delegates serve for 20 years or more, reflecting strong commitments to their sport and the Conservation Congress organization. DNR staffers struck up good relationships with many of those delegates and respected their input on fish and wildlife issues.

The Conservation Congress annual budget is about $100,000 per year, but financial records indicate they consistently overspent this allocation. Law enforcement, wildlife, and fisheries programs were required to contribute additional funds from their own declining budgets to make up the difference, including paying half of the Conservation Congress coordinator's salary and that of one program assistant (DNR employees).



DNR FILE

Murphy's derogatory remarks about women in front of 360 delegates and the press in 1993 left an indelible mark on him and embarrassed the organization. Despite an apology bracketed with excuses after the meeting, his long history of degrading remarks about the DNR staff and other individuals finally caught up with him as he lost his chair position. Despite deteriorating health, he remained a Conservation Congress delegate from Columbia County for another ten years, but his influence was never the same.

The Conservation Congress leadership passed on to former DNR Information and Education specialist Bob Ellingson from 1994 through 1996 and to Steve Oestreicher after that. The relationship with the DNR improved, but a degree of contentiousness remained over some fish and wildlife management issues. While Conservation Congress leaders participated in numerous productive meetings with the DNR staff and reached general agreement on issues and management strategies, later public denials and anti-DNR statements undermined some of the real progress.

Ellingson presented a report in October 1996 from a special committee appointed to evaluate the organization's past performances and to make recommendations on how it could strengthen itself to meet its changing role. The committee was composed of Conservation Congress members, DNR staff, University of Wisconsin faculty, and a representative of the National Association of Conservation Districts. The report concluded that "the Congress has done a good job of fulfilling its role as a citizen advisory arm to the Wisconsin Department of Natural Resources Board." Highlights of its accomplishments were cited including its grassroots foundation, a resolution process linking the Conservation Congress and the Legislature, and its leadership role on major natural resources issues. The report gave the following recommendations for improvement:

1. Strengthen its advisory role to the Natural Resources Board by broadening its representation of the public in natural resources issues.
2. Be proactive in future natural resources initiatives.
3. Improve its relationship with other natural resources groups and the public.
4. Take a leadership role in both private and public land use management issues.

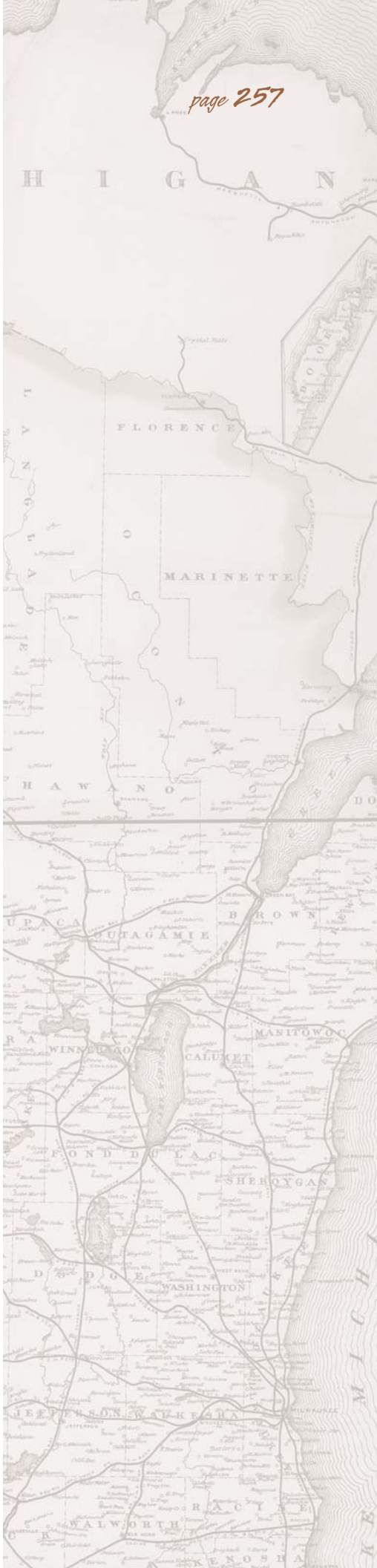
With new Conservation Congress leadership and signs the organization was ready to change old patterns, department personnel were anxious to see a more positive climate to materialize. They also hoped the DNR could regain credibility and respect from the organization. Unfortunately, that didn't happen.

While Bill Murphy's general behavior didn't make headlines in the late 1990s, he didn't adjust his hypercritical remarks toward professional wildlife and fishery personnel. While praising law enforcement to the point of patronage, more derogatory remarks directed at wildlife biologists at a 1999 Conservation Congress District 9 meeting were so bad that Murphy drew public chastisement from Secretary Meyer as well as Natural Resources Board member Herb Benke. Some wildlife managers were so angry about their shoddy treatment that they refused to attend future Conservation Congress district meetings.

An April 10, 2005, *Wisconsin State Journal* commentary featuring the Conservation Congress drew mixed reviews. Patricia Randolph, an animal rights advocate and the state's only non-hunter delegate to serve on the Conservation Congress (1999–2002), wrote strong words about what she described as "a corrupted process under the sole control of a single faction." She went on to emphasize the unfairness of the system and "the incestuous relationship between the Congress and the DNR," suggesting a general fund for all citizens to pay for conservation to remove this longtime bias.

In the same article, Conservation Congress chair Steve Oestreicher reviewed its history and objectives as well as stating this view of his organization:

> *The Congress continues to provide a mechanism for diverse public representation on all natural resources issues. During the past 20 years, more than 175,000 interested citizens have participated in the spring hearing process*



alone [note that public hearings are separate from the Conservation Congress]. Because of the diversity and wide interests of the citizens involved, we have in the past—and will continue in the future—to stay involved in all aspects of resource management rather than focusing on a single or specialized issue like many other conservation organizations.…

…Our current relationship with the DNR is good—but it can get better. Congress involvement in early stage planning can only result in increased communication between the DNR and the public we represent.

Only a handful of people responded to the newspaper commentary. Most expressed the opinion that the vast majority of Wisconsin citizens aren't aware of their hearing attendance opportunity, let alone know anything about the Conservation Congress organization. Some who did attend public hearings expressed disdain for the unruly and discourteous treatment of people expressing opinions against hunting proposals. One even suggested that the non-hunting group should have their own advisory group authorized by the Legislature.

Some people say that the Legislature should completely reshape the Conservation Congress, its bylaws, and statutory charge. An alliance of hunters, anglers, and other outdoor enthusiasts including birders, hikers, campers, equestrians, cross-country skiers, boaters, and others under unbiased leadership could offer the board very valuable direction for future programs.

Frustrated conservation activists have said the obvious bias presented by the Conservation Congress simply cannot be touted as "the voice of the people." In fact, with only a fraction of one percent of all anglers, trappers, and hunters voting at the annual April fish and game hearings, it's absurd to suggest they represent all hunters and anglers, to say nothing about all the people interested in the environment.

Pat Durkin, an award winning freelance writer/editor who writes outdoor columns for the *Wisconsin State Journal, Green Bay Press-Gazette,* and *Oshkosh Northwestern,* was harsher about his views of the organization when asked his opinion in November 2005:

The Conservation Congress has been a keen disappointment to the Wisconsin hunting community for the 25 years I've been covering the state's outdoors scene. It was conceived to be the voice of Wisconsin's outdoor community, but it's mostly a democratic opportunity arrogantly wasted. Its "leaders" lack vision and inspiration and have long promoted an agenda that disdains science and intelligent debate.

The CC's leaders ensure the group stays mired in minutia, and they quickly bore when confronted with true threats to the future of hunting, fishing, trapping and forestry. For instance, rather than stay atop wildlife disease threats posed by chronic wasting disease and bovine tuberculosis *since 2002, the Congress continues to tacitly support baiting/feeding while lobbying legislators—and simultaneously insulting the Natural Resources Board by jumping the chain of command—for deer population audits, elimination of October gun hunts, and other trivial criticisms about deer management.*

Unfortunately, the CC slides under the radar of the Wisconsin media and most legislators. Unlike every other publicly funded, publicly elected body of the state, the CC faces few, if any, checks and balances. In effect, the Legislature gave this 70-year-old organization formal recognition in a 1971 law and turned it loose without oversight or a shock-collar. Lawmakers owe the people of Wisconsin a thorough audit of this organization's funding, structure, bylaws, operation, and effectiveness to ensure it becomes the true voice of the Wisconsin environmentalist.

Bovine tuberculosis
A highly contagious disease in cattle that can be transmitted to deer and people.

This is the Legislature's responsibility because the CC itself will never change on its own. The CC's cynically constructed infrastructure insulates its leadership from the public and even its own 360-person delegation, thus making democratic, internal reform impossible. Its leaders systematically root out possible "troublemakers" and set up the CC's committees to ensure the status quo is forever protected. Without external reform, the CC is destined for irrelevancy.

Former DNR staffers have said the Natural Resources Board consistently ducked its responsibility to keep the Conservation Congress effective and productive in its advisory role. For at least the last 30 years and accelerating after Bill Murphy became its chair, the organization routinely bypassed the board and lobbied the Legislature in direct opposition of board-approved matters.

Verbal attacks on DNR resource professionals in a public forum were frequent and often personal. Rarely did board members intervene when DNR staffers were humiliated by nasty personal attacks by Conservation Congress delegates. These degrading remarks not only were devastating to the DNR staff morale but also contributed significantly to its loss of credibility with the public.

Most DNR resource management personnel acknowledge that the Conservation Congress has done some good work over the years, but some people have suggested it may have outlived its usefulness. Modern communications technologies might provide less expensive ways to gather public opinions from a larger portion of the general public. Environmental programs can benefit from broad-based citizen participation.

There is no question that the DNR and the Legislature needs citizen input on a variety of issues. Knowing what the taxpayer likes and doesn't like is one ingredient to good government. How to obtain that counsel economically in a positive, constructive manner doesn't appear to attract any attention as the old system is allowed to just plod along.

New Bureau Director

Tom Hauge replaced Steve Miller as the director of the Bureau of Wildlife Management in 1992. Hauge, only 39 at the time, continued Miller's push toward a more holistic wildlife management program but faced political, economic, and detrimental wildlife disease issues like no other wildlife administrator before him.

Hauge was born in Sun Prairie soon after his parents moved off their Stoughton farm near Lake Kegonsa. His dad hunted pheasants in the Sun Prairie area and deer near Black River Falls. Those hunting stories and the excited anticipation of seeing whether or not his dad or uncles were successful lit a fire for hunting in Tom that would last a lifetime.

After graduating from high school in 1971, Hauge began taking classes at the University of Wisconsin in Madison with some sort of conservation major in mind. A fortuitous introductory conservation class taught by Dr. Orin Rongstad set his life track. Dr. Rongstad lectured his students hard on the realities of the wildlife job market. Rongstad urged pursuit of a master's degree for the best chance at being hired in wildlife management; Hauge took that advice.

Hauge earned his B.S. degree in wildlife ecology in 1975. An offer to assist two other graduates in an Alberta big game study supervised by Professor Lloyd Keith solidified his graduate study pursuits. Three years of studying moose using radio telemetry in the Tar Sands of northeast Alberta established the basis for his master's thesis.

His girlfriend, Mary Jon Hutter, became his wife on February 17, 1978, and he completed his advanced degree course work the following December. He began his professional career in the spring of 1979, accepting an LTE position with the DNR at the Poynette Game Farm. He was hired in the central office as a comprehensive planning LTE under Harry Libby (Wildlife Bureau) and Dennis Schenborn (Fisheries Bureau) that fall.

DNR FILE

Tom Hauge directed the wildlife management program into the new millennium.

Hauge's LTE position was converted to a project position in September 1981 in a new process called "Comprehensive Fish and Wildlife Planning" (described in Chapter 6). Computers were just coming on-line, and his data entry skill led to Hauge's compilation of the state's first computer-generated deer harvest tabulation in 1982. His project status enabled a lateral move to a wildlife manager position at Spring Green later in 1982. He supervised wildlife activities in Sauk County and northern Iowa County under area wildlife manager Lewis Meyers.

In January 1985, Hauge was promoted to the central office on the Bureau of Wildlife Management staff in a newly created wildlife damage position. Coordination of a private lands program initiated in Dodge County was added to his wildlife damage position. He was promoted to become the leader of a new Public Services Section when the bureau staff reorganized in 1989.

When Steve Miller was promoted to the assistant division administrator's position in early 1992, it opened up the wildlife management bureau director job, and Hauge competed for the appointment. He emerged as the most qualified candidate and started his new duties on August 9, 1992.

Wildlife Management Operations

Many staff changes took place in the course of the next 14 years. Initially, twelve permanent personnel and two LTEs were on the bureau staff. Vacant full-time positions were left unfilled for long periods of time, and often student interns or LTEs substituted for these positions. In 2005, the program included about 160 permanent positions (most are listed in Appendix O).

Bureau staff reorganization after 2005 formed three sections: Management Systems under JoAnne Farnsworth, Ecology under Bill Vander Zouwen, and Wildlife Health with a vacant section chief position. Eighteen permanent personnel, fifteen LTEs, and two project positions made up the balance of the bureau staff.

This period marked a changing trend in the wildlife management profession. Wildlife employees formerly were hired based on their educational background and accomplishments, but a farming background had given them a distinct edge in the hiring process because fieldwork commonly required mechanical skills. Advanced degrees and job experiences became important in the 1980s. After the early 1990s, people skills were emphasized, and training involved subjects like perceptive communications, perceptive thinking patterns, and the collaborative workplace.

The wildlife technician position also experienced significant changes during this period. Early conservation aids and game technicians were hired purely based on their mechanical skills and practical know-how for getting physical work done. Some in-service sessions were conducted on new equipment, but such on-the-job training was not mandatory. Today's wildlife technicians still need mechanical skills but now must have more biology in their backgrounds because they are required to work on tasks formerly assigned to a wildlife biologist. Training needs have increased and are mandatory because of federal safety standards covering pesticide application, heavy equipment operations, confined space activities, chainsaw operations, prescribed burning, and all-terrain vehicle use.

The profession also experienced a steady increase in female employees. The Wisconsin DNR wildlife program composition expanded from one female in 1977, to four in 1988, eight by 1998, and 15 by 2005. This added diversity was more than just a numerical change in gender composition. It infused ideas generated from a new perspective and enhanced the learning curve of the profession.

DNR FILE

Land Acquisition

Purchasing land within approved property boundaries remained a major program activity throughout this period. Wildlife area ownership was nearing 460,000 acres on 220 properties by June 1992. An additional 136,000 acres were leased for public hunting. The ownership total increased to almost 500,000 acres by 2005, but lease acreage dropped to less than 43,000 acres.

The $250 million Knowles-Nelson Stewardship Program was the DNR's primary funding source for land purchasing. However, North American Waterfowl Conservation Aid grants and cooperative agreements with the U.S. Department of Agriculture's county-based Natural Resources Conservation Service and the U.S. Fish and Wildlife Service contributed over one million dollars in cost sharing for acquisition each year.

Master Planning

The master planning system in place for the previous 15 years finally bogged down. With over 100 major wildlife areas still needing master plans, a huge amount of the wildlife biologist's time was needed to complete the process. With budget cutbacks and reduced personnel, however, it was obvious that some priority work had to be eliminated. Master plans were put on hold indefinitely until a new, simpler system could be put in place.

The comprehensive wildlife management planning system continued to drive the strategic decisions on budget and program priorities. Now, backed by extensive experience mechanized by a modern computer system, field managers submitted projects biennially, estimated labor and costs, prioritized each project, and submitted projects through their district (later region) to build the two-year budget.

The bureau staff meets with the field staff prior to each biennium to discuss and prioritize projects proposed for funding. Ultimately, the Bureau of Management and Budget staff and the secretary decide what projects are included in the department's biennial budget proposal. The procedure requires Natural Resources Board approval before the budget is submitted to the Legislature and governor for final analysis, modification, elimination, or approval.

The 1992–93 Fiscal Year budget expenditures for the wildlife management program were just over $11 million. While most hunting license sales were declining after a century of increases, a robust deer hunting program supported an annual budget of $19 million by 2005. While revenues were up, so were program responsibilities and the cost of doing business (salaries, vehicles, equipment, rentals, fuel, etc.). Along the way, chunks of the traditional program including some wildlife area development and maintenance activities were eliminated to keep up with new expenditures.

The trend in license sales continued to decline nationally and in Wisconsin (Table 15). Declining father-son relationships, some declining game populations, increasing costs, deer program controversy, and changing public interest were contributing factors to this decline. Wildlife management efforts to stabilize hunting participation began to focus on youth and women hunter education programs.

Table 15. *Resident hunting license sales.*

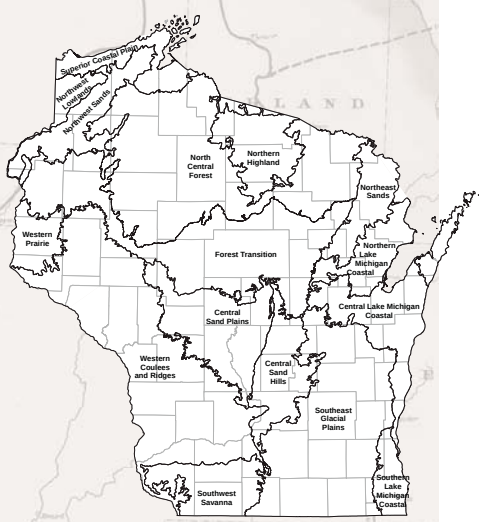
Year	Patron	Sports	Gun Deer	Archery	Small Game
2000	77,415	92,014	483,419	171,978	128,946
2001	81,315	86,130	480,361	169,821	124,005
2002	81,896	75,123	429,128	138,011	121,112
2003	81,074	72,541	456,491	158,650	127,907
2004	74,430	82,144	459,879	170,298	115,290
2005	69,859	81,701	456,032	173,127	109,103

Land Management

The process of land management got more complicated during this time period. Environmental assessment, historic preservation, Natural Heritage Inventory, Native American coordination, agricultural land impact, and other land and policy influences increased the amount of time it took wildlife biologists and technicians to implement management activities. Reorganization also added a large number of fisheries properties to the wildlife biologist's work responsibilities.

Land management issues became more complex with user groups competing more aggressively for the right to use wildlife areas for activities like horseback riding, snowmobiling, cross-county skiing, and all-terrain vehicle operations. New DNR

DNR FILE



Sixteen ecological landscapes have been identified in Wisconsin.

regulations for dams and dikes required more training, inspection, and maintenance commitments. Invasive species like box elder, honey locust, purple loosestrife, and garlic mustard were taking an increasing amount of labor for control.

Ecosystem management was now the byword for the DNR. Sixteen ecological landscapes have been identified in Wisconsin. Several large, landscape-scale projects were studied and implemented, including the Glacial Habitat Restoration Area, the Western Prairie Habitat Restoration Area, and the Central Wisconsin Grassland Conservation Area.

Wildlife biologist Dale Katsma culminated a decade of effort to create a unique land acquisition project called the North Branch of the Milwaukee River Wildlife and Farming Heritage Area. Ellen Barth and Kay Brockman-Mederas led a Northeast Region effort to create a 50,000-acre habitat corridor on the Wolf River. Turtle Valley and the Jefferson Marsh wildlife areas were created through the cooperative effort of the DNR, the U.S. Fish and Wildlife Service, and the Natural Resources Conservation Service using Knowles-Nelson Stewardship funds and the Wetland Reserve Program (WRP) and North American Wetlands Conservation Act (NAWCA) grants.

Basic property management was scaled back in recent years but still included annual property boundary posting, litter pickup, noxious weed control, parking lot maintenance, timber sales, sharecropping, prescribed burning, dike and water control structure maintenance, water manipulation, and over 30 other identifiable work tasks conducted by wildlife managers, technicians, and seasonal workers.

Statistical data randomly selected from a 1997 wildlife management report indicated that work classified as maintenance on state fish and wildlife property was completed on more than 142,000 acres of wetlands, 339,000 acres of woodlands and brush lands, and 62,000 of grasslands. However, the workload was increasing as land was being acquired each year with fewer people, less time, and less funding available to handle it.

Habitat development cannot be quantified in a useful manner over the 13-year period but continued on an impressive scale statewide. Again, using a 1997 report as an indicator, the annual figures included 666 acres of wetlands restored, 2,669 acres of grasslands established or restored, 347 miles of firebreaks constructed, 305 acres of forest openings created, three miles of new dikes constructed, 312 acres of food patches established, 143 acres of wild rice established, and 253 nesting structures constructed.

Facility maintenance on public lands was another major time-consuming, labor-intensive activity for wildlife managers and technicians. The 1997 list included 136 buildings, 789 parking lots, 129 miles of fencing, 1,566 miles of trails, 253 miles of roads, 13 campgrounds, 18 rental properties, 857 miles of posted boundary, 21 disabled person facilities, and 194 other facilities. Development added 28 parking lots, five miles of fencing, 65 miles of trails, four miles of roads, seven disabled person facilities, and 19 other facilities to the future maintenance list.

Game Farm

The Poynette Game Farm under Don Bates survived numerous budget and manpower reduction cycles but was still producing 50,000 adult rooster pheasants for fall stocking on public lands. The game farm facility also provided more than 60,000 day-old chicks to 112 conservation clubs for additional release to the wild. Experiments with Jilin Province (China) and Iowa strains of wild pheasants were ongoing with 2,000–3,000 adult birds released annually to improve the gene pool.

Bates transferred to become CWD Operations supervisor in 2005, and Bob Nack was hired as the new game farm superintendent.

Wildlife Damage

Most wildlife damage and nuisance control is currently handled under contract with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. Statutory funding of the program is administered by the DNR and payments coordinated through the Wildlife Management Bureau. Over 5,000 complaints were processed each year, with deer, goose, turkey, and bear damage the only type of damage payments authorized by law.

Expansion of wildlife into urban areas is a rapidly growing problem that has direct effect on wildlife populations and their management in Wisconsin. The DNR hired its first urban wildlife manager, Ricky Lien, in July 1999. He was stationed in Milwaukee because of its tremendous volume of nuisance wildlife complaints. Expanding city flocks of giant Canada geese added to the urban wildlife problem because of concentrations on golf courses, boat docks, parks, and other public use areas. Cormorants became overabundant on Green Bay and conflicted with anglers. Gulls with their defecations and noise also drew frequent public complaint.

Nuisance animal shooting permits are administered by the DNR. More than 500 deer shooting permits were issued in recent years with up to 8,000 deer removed by permit annually. Goose and bear shooting permits usually involve less than 30 total permits each year.

Wildlife Education

Wildlife educational efforts coordinated by Dr. Mary Kay Judd were now program staples. Dr. Judd married in 1997 and became Mary Kay Salwey. In an unusual arrangement for a central office program, Salwey directed wildlife education from a DNR field office located in Alma in west central Wisconsin. Computer technology and frequent trips to Madison enabled efficient program coordination despite the remoteness of the office.

The educational efforts of the Bureau of Wildlife Management revolve around publications and programmatic administration of several activities designed to teach wildlife management principles to students and the general public. The education staff includes four environmental center personnel and four educators stationed at various regional headquarters. While Dr. Salwey doesn't directly supervise these individuals, they maintain a close working relationship and actively promote bureau-generated programs.

The primary public exposure to field-based wildlife education takes place at Horicon Marsh, Sandhill, Crex Meadows, and Mead wildlife areas and in the Ladysmith area where more than 40,000 people annually participate in sponsored events. The DNR wildlife educators conducting programs at these sites were, respectively, Bill Volkert, Dick Thiel, Jim Hoefler, Tom Meier, and Christian Cold.

A group called the Friends of Horicon Marsh International Education Center was organized in 1994 and devoted 13 years to fundraising to develop an education center. They were successful in raising almost $3 million in cash and in-kind donations that, combined with state funds, resulted in the construction of a $4.8 facility in 2007. The new education center includes an auditorium, two classrooms, a traveling exhibit area, library, gift shop, children's discovery room, and a large public viewing area overlooking the marsh. An exhibit hall and museum quality displays coupled with a wildlife educator, Bill Volkert (now retired), are expected to serve more than 500,000 annual visitors and enhance understanding of the marsh's cultural and natural history.

Under Jim Hoefler's leadership, the Friends of Crex organized in 1985 to support the programs and wildlife at Crex Meadows Wildlife Area. When its membership exceeded 500 in the 1990s, it became the largest of its kind in the state. In 1995, their fundraising efforts attracted over one million dollars in donations to build an education and visitor center. This state-of-the-art, 8,600-square-foot facility opened its doors in April 2002. The Friends group also established an endowment fund to provide perpetual funding to support education and management programs including LTE positions, equipment, supplies, and land purchasing. Tours led by Hoefler and educational projects have been ongoing for more than 15 years.

Project manager Tom Meier coordinates the 200-member Friends of Mead-McMillan organization, which supports the Mead and McMillan wildlife areas. They not only generated over $1.6 million in donated funds to construct an attractive, environmentally sensitive visitor center on the George W. Mead Wildlife Area (constructed in 2007) but also generated another $500,000 to attract a match grant from the Mead-Witter Foundation. The resultant million-dollar Mead Trust enabled a full-time educator to be hired for the facility. Meier (only the second Mead manager in

Wildlife educator Mary Kay Salwey.

Horicon Marsh International Education Center.

PHOTOS: DNR FILE

On September 5, 2003, about 150 wildlife biologists, wildlife technicians, researchers, administrators, and retirees gathered at the Poynette Game Farm to pay tribute to their past. The highlight of the event was a visit to "Leopold's shack" at the invitation of the Aldo Leopold Foundation. Leopold's daughter, Nina Leopold Bradley, was the featured speaker and told stories of her father and the origins of the profession.

DNR FILE

its 50-year history) and LTE educator Pam Stange offer educational and interpretive programs to statewide school districts, organizations, and individuals year-round. An annual landowner appreciation picnic has become a program staple.

Chris Cold, a wildlife technician stationed at Ladysmith, serves K-12 schools in northwest counties as a "mobile educator." Focusing on wildlife and plant ecology, Cold offers a unique perspective of habitat management, regulated harvest, and traditional outdoor skills, using live animals in his presentations. Cold's live red-tailed hawk assistant helps him relate quickly to his audience, and his display of furs, feathers, bones, scats, and mounted specimens allows a hands-on approach most effective in the classroom.

In 1995, Dr. Salwey planned, developed, and coordinated the Wisconsin portion of a national Watchable Wildlife program. With logistical support from the Wisconsin Department of Transportation, binocular-logo signs were placed along state and county highways identifying 150 sites with special wildlife viewing attributes. Seventy-six of the sites were judged "premiere" and incorporated into the national Watchable Wildlife network. Salwey also wrote a 95-page booklet entitled *Wisconsin Wildlife Viewing Guide* as part of the official series produced by the national program.

Dr. Salwey coordinated the first "Outdoor Skills Day" conducted in numerous state parks in August 1996. This was part of an ongoing bureau effort to help Wisconsin youth become active in hunting, fishing, trapping, archery, and camping activities. The following year, she teamed with the Law Enforcement and Legal Services bureau staffs to introduce a "Learn to Hunt" program, which was designed to give first-time hunters (youth and adults) a safe, quality hunting experience using trained and experienced supervisors. Here's how the program works:

- Conservation clubs interested in helping serve the future of hunting in their communities file an application with their local DNR office.
- The club identifies a DNR-certified hunter education instructor (separate DNR program administered by law enforcement) and a "hunting mentor" with at least five years of hunting experience willing to participate with a first-time hunter.
- First-time participants are to be exposed to at least four hours of classroom and field instruction relating to firearm safety and hunting techniques for the specific game animal to be hunted.
- The actual hunt could be within the normal hunting season framework or a specific date during the closed season.

Two other publications developed by Dr. Salwey assisted wildlife biologists and foresters in the field to answer public inquiries and to help landowners improve wildlife habitat:

- A 13-part *Wildlife and Your Land* series that provides helpful and practical wildlife habitat improvement projects
- A map publication entitled *Wisconsin DNR's Public Wildlife Recreation Land* identifying the location of all state-owned and leased wildlife areas offering a variety of recreational opportunities

Each year, Dr. Salwey developed handouts and exhibits for use at the Wisconsin State Fair where the DNR staff presents all of its programs to more than 100,000 visitors. She also developed a special exhibit celebrating the 75th anniversary of the wildlife management profession in 2003.

In 2005, Dr. Salwey also published a 25-chapter activity book entitled *Learning to Hunt,* designed in a style similar to the Project WILD activity guides. A supply of books was provided to all wildlife biologists and distributed to conservation organizations to inspire them to sponsor "Outdoor Skills Days" in their local communities.

The Bureau of Wildlife Management with the support of the Bureau of Law Enforcement also introduced a "National Archery in the Schools" program into the Wisconsin school system in 2005. This new initiative provides experts in archery and

bow hunting to certify physical education teachers for grades 4 through 12 to safely conduct school-based archery training. To date, 50 teacher-trainers have been certified and are currently working on school programs. Avid support for the new archery program in the schools is provided by a variety of local rod and gun clubs and organizations including the National Wild Turkey Federation, Whitetails Unlimited, Rocky Mountain Elk Foundation, Safari Club International, Wisconsin Bowhunters, and Wisconsin Field Archery Association.

Numerous other educational efforts continue to improve the public's understanding of modern wildlife management and should be mentioned in passing. "World of the Whitetail" and "Mammals of Wisconsin" materials for school use, fact sheets on wildlife on the DNR Web site, regular press releases, and at least 50 brochures describing wildlife-related programs and activities are maintained annually.

Furbearers

Furbearing animals (beaver, bobcat, coyote, fisher, mink, muskrat, otter, marten, red fox, and weasel) remain an important resource in Wisconsin, and furbearer biologist John Olson coordinated the bureau's program. Trapper education, annual harvest quotas, surveys, research, trapping technology, and countless meetings are necessary to keep programs viable and ensuring the best possible research information is available for furbearer management.

The Wisconsin Trappers Association (under the leadership of Rick Tischaefer, John Irwin, and Virgil Schroeder) became a nationally recognized leader in outreach and trapper education programs. Their support of national research to develop trapping systems that reduce injury to trapped animals and non-target captures is especially noteworthy.

In a bold example of using science in management, Olson and Tischaefer organized, coordinated, and published a three-year research project on dry-land cable restraints. They did it in the face of strong opposition from key members of national user organizations. The final research results were eventually accepted and published as a best management practice for trapping by the International Association of Fish and Wildlife Agencies. Wisconsin and several other states have adopted this unique tool with positive results.

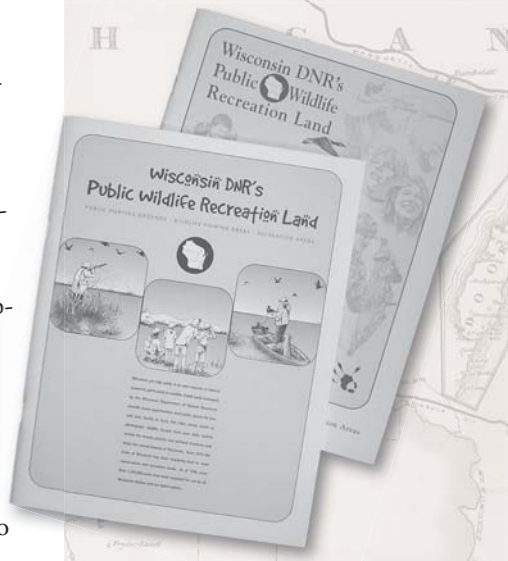
Wildlife Health

The wildlife health program in the bureau has matured and expanded to four full-time positions over the last 20 years. Its leader, Dr. Sarah Shapiro Hurley, was promoted to become the Lands Division deputy division administrator in September 1997 and was replaced by Dr. Julia Langenberg. A full-time toxicologist, Sean Strom, a CWD veterinarian, Dr. Simon Hollamby, and wildlife health program technician, Kerry Beheler, assisted Dr. Langenberg. New staffing occurred after 2005; the wildlife health staff is assisted by an LTE work force of up to eight employees.

Wisconsin's large deer herd and strong domestic cattle industry faced new concerns, and a variety of testing was initiated in 1999. The wildlife program began monitoring bovine tuberculosis, cranial abscessation syndrome, and chronic wasting disease (CWD). CWD (described in Chapter 9) took an inordinate share of staff time. Statewide monitoring and diagnostic work are also ongoing for addressing diseases recognized in the past and for taking on new threats like West Nile virus and avian influenza. New captive wildlife health regulations have added even more staff commitments.

Private Lands Management

The private lands program was still active, revolving around three permanent private lands positions funded by pheasant stamp revenue and up to four field positions funded by NAWCA or WRP. Wetland restoration projects and the delivery of federal Farm Bill wildlife habitat assistance programs were a major program emphasis. While assisting private landowners remained important for other wildlife biologists, special assignments reduced the time they could spend on this activity.



PHOTOS: DNR FILE

Top: Furbearer biologist John Olson, 2002.

Bottom: John Olson demonstrates how to set a trap.

Reorganization Impacts

According to Wildlife Management Bureau director Hauge, the 1996 reorganization was "a distraction to the wildlife management program." Retired biologists with long experience in the wildlife management profession and many reorganization cycles could only shake their heads and empathize with their former peers.

Core expertise was repositioned in the five regions (formerly districts) as 12 senior staff people left the wildlife program to become Geographic Management Unit (GMU) leaders or transferred to other non-wildlife positions. Coupled with more than 25 retirements through 2005 and their subsequent replacement with mostly new, inexperienced wildlife biologists and technicians, the challenges for Hauge and the wildlife program were numerous.

Reorganization also impacted the wildlife program at the GMU level in the five regions. Each region was composed of several GMUs set up on watershed boundaries. Most GMU leaders were from other programs like parks, forestry, or one of the environmental programs (wastewater, solid waste, air quality management, etc.). This type of line supervision by people outside the wildlife program was bound to make the decision-making process more time consuming.

GMU leaders supervised all the programs except law enforcement within their GMU. Making matters seem cumbersome, GMU leaders reported to leaders of the Land and Water divisions located at the regional headquarters rather than directly to the regional director. Again, most of these leaders were not from the wildlife program, so the limited program knowledge meant decisions were slow and wildlife program support was not always a priority.

The liaison between the bureau and the regions changed significantly. The old district staff specialist position (supervisory level) was eliminated, and most of those very senior individuals were lost to the program with job changes. Program expertise remained at the region office with the creation of a "wildlife expert" position, but that position was nonsupervisory. Another reorganization in 2001 changed the expert into a "regional wildlife supervisor" similar to the old district staff specialist position.

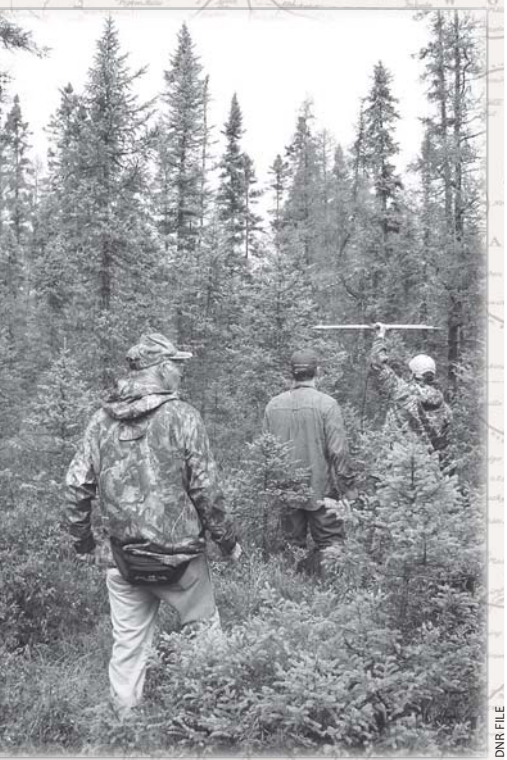
Wildlife and Forestry Research

(Author's note: Gerald Bartelt provided the archival search, staff coordination, and primary authorship of this section. Keith McCaffery and Bruce Kohn provided additional input and editing.)

This was a period of significant change, growth, and loss for the wildlife research program. The frequent change in DNR leadership had a marked impact on program administration and employee morale. From 1992 through 2008, five different secretaries led the agency, and five different division administrators led the science program. New administrators were often unfamiliar with the role that the department's science program plays in natural resources management and at times questioned the need for an agency research program. Numerous reports and many hours were spent justifying the need for the department's 80-year-old wildlife research program.

In 1992, a new forestry research program was added to the wildlife research program, and the name of the section changed to the Wildlife and Forestry Research Section. The Wildlife and Forestry Research Section was structured into two groups, each having a first-line supervisor: the Northern Wildlife Research Group and the Southern Wildlife Research Group. This change eliminated one supervisory position. Under that structure, Keith McCaffery supervised the northern research studies, and LeRoy Petersen supervised the southern research studies. McCaffery and Peterson also supervised wildlife education research, wildlife toxicology, and the wildlife surveys programs.

From 1992 to 1995, research programs and staff increased to address new emerging problems and to provide additional services to the department. During this period, the Wildlife and Forestry Research Section staff had grown to 24 positions. The section had one section chief, 19 permanent scientists, two project scientists, two wildlife research technicians, and one part-time statistical clerk. The two project positions ended, and a vacancy left by John Kubisiak's retirement was eliminated because of budget cuts.



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Just prior to the 1995 reorganization, the section chief supervised 17 scientists, two wildlife research technicians, and one part-time statistical clerk. In addition, statistician Paul Rasmussen and editors and publication specialists Betty Les, Wendy McCown, Dreux Watermolen, and Michelle Voss aided the staff.

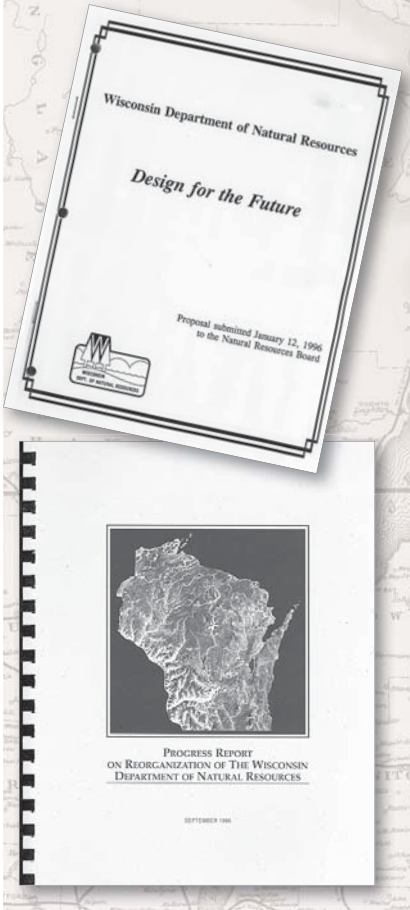
Bob Dumke was the Bureau of Research director from 1990 to 1995. Lloyd Leuschow was appointed acting director of the new Integrated Science Services Bureau, which contained the old Bureau of Research. Following the retirement of Leuschow in 1996, Bob Dumke was appointed as director of the Integrated Science Services Bureau until he was placed on a special assignment to the DNR secretary in 1997. In 1997, Jim Addis was appointed director and served in that capacity for three years until his retirement in 2000; Jack Sullivan replaced him. Jerry Bartelt served as the Wildlife and Forestry Research Section chief throughout the period from 1992 to 2007. Karl Martin was promoted to Wildlife and Forestry Research Section chief in 2008.

Reorganization

With the 1995–96 reorganization, the Bureau of Research was combined with the Bureau of Environmental Analysis and Review and the Office of Technology Services to form the new Bureau of Integrated Science Services. The new bureau was added to the Division of Enforcement, which was renamed the Division of Enforcement and Science. The new bureau arrangement created an awkward structure for the Integrated Science Services Bureau in that it now had three different missions and occasional competition with the Bureau of Law Enforcement for funds and positions, especially when there were cuts to be made.

One objective of reorganization was to provide a staffing structure that supported multidisciplinary studies yet allowed for continuation of expertise in the research program that paralleled management specialists in the management program (e.g., deer researcher to deer management specialist in Wildlife Management). Nine sections were created in the new Integrated Science Services Bureau, and the Wildlife and Forestry Research Section was renamed the Terrestrial Ecological Systems Section. Former staff members from the Wildlife and Forestry Research Section were reassigned to six of these nine sections as follows:

- Seven scientists and two wildlife research technicians to the Terrestrial Ecological Systems Section
- Two scientists to the Information Synthesis and Adaptive Strategies Section
- One scientist to the Aquatic Ecological Systems Research Section
- One scientist to the Environmental Contaminants Research Section
- Two scientists to the Ecological and Inventory and Monitoring Section
- Two scientists to the Socio-economic Systems Section



The staff that remained in the new Terrestrial Ecological Systems Section reported directly to the section chief; two group leader supervisory positions were eliminated and converted to scientist positions.

At the end of reorganization in 1995, the old Wildlife and Forestry Research Section had been reduced from 17 scientists and two research technician positions to seven scientists and two research technicians. It was hoped that when staff moved to other sections, they would be available to collaborate with Terrestrial Ecological Systems Section staff to address priority research for the department. Such collaboration became difficult.

Administrative difficulties arose under the new organizational structure. The Terrestrial Ecological Systems chief had responsibility for managing the entire Pittman-Robertson federal aid grant that was now used by scientists in six different sections. Under this structure the supervisory position responsible for meeting the requirements of the Pittman-Robertson grant was not responsible for supervision of almost half the staff using it. This led to unnecessary bureaucracy and confusion among staff and sections.

More Changes

In 1998, another reorganization was undertaken, and sections were realigned with funding sources and programs that they served. The Terrestrial Ecological Systems Section name was changed back to the Wildlife and Forestry Research Section. Fourteen of the original Wildlife and Forestry Research Section scientists and two research technicians were restored to that section.

One position originally in the Wildlife and Forestry Research Section was moved to the Inventory and Monitoring Section when the incumbent scientist retired (the position, along with the section, was later moved to the Bureau of Endangered Resources), and another position was moved to the Information Synthesis and Adaptive Strategies Section when that incumbent scientist retired. That position was later moved to the Fisheries and Aquatic Sciences Research Section.

The environmental education researcher position was left in the Socio-economic Systems Section, which was later combined with the Information Synthesis and Adaptive Strategies Section, and was then eliminated in 2007 because of budget shortages. The Wildlife Toxicologist position was left in the Environmental Contaminants Section at this time but was later moved back to the Wildlife and Forestry Research Section in 2004 when the Environmental Contaminants Section was combined with the Fisheries and Aquatic Sciences Research Section.

Since 1998, the structure of the Wildlife and Forestry Research Section has remained the same. However, two additional positions were eliminated through budget shortfalls and position cuts. Over the period, the section lost nine permanent scientist positions. Currently, the section has ten scientist positions and two wildlife research technician positions.

The research program (now entitled the Bureau of Science Services) remained a "central office program" throughout the reorganization process with statewide responsibilities and independent purchasing, fleet, and office management responsibilities. Prior to reorganization, a Research Advisory Committee composed primarily of the DNR secretary's staff reviewed the agency research work plan to ensure it was meeting the highest priority department needs. After reorganization, this duty was assigned to a newly created Integrated Management Team (IMT).

The IMT dissolved in 1998, and to date (2005) no department team has been given the responsibility to review the department's research plan. Currently, wildlife and forestry research needs are solicited from the bureaus of Wildlife Management, Endangered Resources, and Forestry and their field staff as well as from research scientists. This information is reviewed and prioritized to set a research agenda by the Wildlife Management Bureau's Wildlife Policy Team, which has representatives from Endangered Resources, Forestry, and Science Services. Funding is sought for the highest priority projects, which are conducted as soon as possible.

Office Consolidation

This time period was an era of consolidation of research staff and offices primarily for budget purposes but also to provide more interaction among scientists and stimulate creative discussions and research approaches. At the beginning of the period, Wildlife and Forestry Research Section staff were dispersed at six offices: the Monona Research Center, Rhinelander Ranger Station, Sandhill Demonstration Area, Park Falls Area office, Horicon Area office, and Grantsburg (and temporarily in La Crosse). As research staff retired, research offices at Grantsburg, Park Falls, Sandhill, and Horicon were closed. Vacancies were either moved to the Rhinelander or Madison research offices, lost to budget cuts, or moved to other programs. Research staff at the Rhinelander Ranger Station moved to the lower level of the Rhinelander Regional office in 2003.

Researchers housed at the Nevin Fish Hatchery office building in Fitchburg since 1945 were moved to the National Cash Register (NCR) building in Monona in January 1991 (called the Monona Research Center) when the then Southern District needed more room for its staff. Research staff remained in the Monona Research Center for over ten years, but as this leased building was no longer repairable, a new Science Operations Center on the city's southeast side was privately constructed and leased to the agency.

The new Science Operations Center was designed to DNR specifications with office space, laboratories, workshop, space for a fleet of vehicles, and storage space for scientific equipment. Today, all wildlife and forestry research staff is housed in either the Madison or Rhinelander offices. This has come with some loss of direct connection with other department field staff and their programs but has improved interaction among scientists and increased efficiency of program management.

All department libraries along with librarian positions were eliminated in 2007 because of budget shortfalls. These libraries contained the agency's institutional memory with documents found nowhere else and often contained the rationale for the department's past decisions and management. Since research cannot be conducted effectively without using already published information, the Bureau of Science Services took over the responsibility for a combined library at the Science Operations Center. The bureau funds the costs of the library using its own operational budget but can no longer provide library services to other department staff.

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Funding

Funding for the Wildlife and Forestry Research Section changed during this period. Base funding from the Pittman-Robertson (P-R) federal aid grant has remained and has been used to support wildlife research. However, as budget cuts were imposed on other funding sources in the Science Services Bureau (e.g., general purpose revenue and fish and wildlife segregated funds), basic program costs were sometimes shifted to the P-R budget when appropriate. In addition, almost all segregated dollars dedicated to the Wildlife and Forestry Research Section were lost through budget cuts. Only enough segregated dollars remained for minimal basic program services.

When chronic wasting disease (CWD) was discovered in Wisconsin in 2002, a significant amount of Conservation Fund dollars was made available to the Wildlife and Forestry Research Section to conduct research on CWD and its effects on the deer population and hunters until 2007. In 2007, over a million dollars in CWD state funding was cut, reducing the number of dollars available for CWD management that resulted in reductions in fish and wildlife segregated dollars for CWD research by more than two-thirds.

Forestry dollars increased significantly during this period to support forestry research needed by the Division of Forestry. Forestry transferred forestry mill tax dollars that historically had been spent at the University of Wisconsin-Madison to the Wildlife and Forestry Research Section to support forestry research. These dollars were still used to fund contracts with the university, but this was done through Science Services. In addition, a budget initiative sponsored by the Forestry Division brought forestry mill tax dollars to the section to investigate ways to manage forests and maintain more biological diversity (old growth study). Both these sources have become part of the section base budget.

Additional mill tax dollars were secured by the Forestry Division to pay for a cooperative forest ecologist position at the University of Wisconsin-Madison; these dollars, however, remain in the Forestry Division budget. Another budget initiative by the Forestry Division brought mill tax dollars to support a study to develop software to visually show changes in forest growth under different management scenarios to help the public understand proposed management actions. These dollars were committed for a two-year period to complete the study.

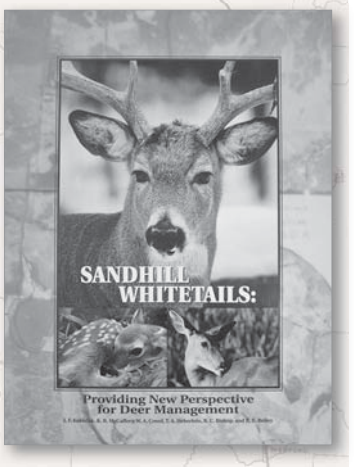
The State Wildlife Grant was a new source of federal funding that became available during this period to manage primarily nongame species. This funding source is dedicated to manage species that are neither hunted, trapped, nor listed as endangered or threatened. Some dollars from this funding source have been invested in research to understand their ecology and how to manage them.

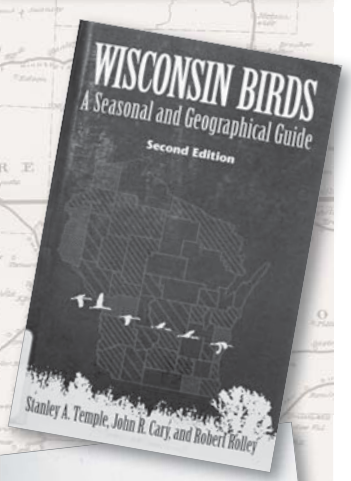
The biggest change in funding for the Wildlife and Forestry Research Section has been competing for and securing outside grants. By 2007, almost one-third of the section budget came from outside competitive grants. During this period, sources such as the Environmental Protection Agency, U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, National Park Service, and private foundations and

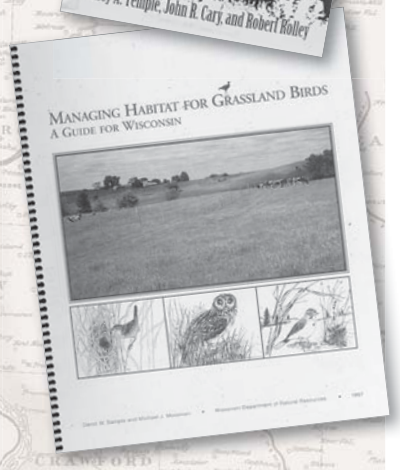
nongovernment organizations have provided millions of dollars for needed wildlife and forestry research in Wisconsin.

Research Publications

Publication of data shifted away from department-produced Technical Bulletins and Research Reports to outside peer-reviewed scientific journals during this period. This gave greater national exposure to DNR scientists and aided in competing for outside grants. Several department "Miscellaneous Publications" were written summarizing research projects:







- *Sandhill Whitetails: Providing New Perspective for Deer Management,* written by John Kubisiak, Keith McCaffery, Bill Creed, Tom Heberlein, Rich Bishop, and Robert Rolley, summarized over 30 years of deer research at the 14.3-square-mile (9,150 acres) fenced Sandhill Wildlife Demonstration Area.
- *Managing Habitat for Grassland Birds: A Guide for Wisconsin,* by David Sample and Michael Mossman, described grassland birds and their habitats and provided recommendations on how to manage these species in the state. This publication was recognized by The Wildlife Society in 1999 as the "Outstanding Publication in Wildlife Ecology and Management in the Monograph Category," the highest publication award given by this professional society.
- A management handbook entitled *Management Workbook for White-tailed Deer* was revised in 2001.
- Robert Rolley, Keith McCaffery, Brian Dhuey, and Jerry Bartelt contributed to a DNR publication entitled *Wisconsin's Deer Management Program: The Issues Involved in Decision Making,* which was very popular with hunters and quickly ran out of copies. It received an "Award of Excellence" in 1994 from the Wisconsin Chapter of the Society for Technical Communication.
- Jerry Bartelt, Robert Rolley, Keith McCaffery, David Mladenoff, and Richard Henderson contributed to the preparation of *Deer Population Goals and Harvest Management: Environmental Assessment,* a 305-page document.
- In 2001, John Kubisiak, Robert Rolley, Neal Paisley, and Bob Wright published *Wild Turkey Ecology and Management in Wisconsin,* a special report summarizing seven years of turkey research.
- Robert Rolley published a report entitled *Controlling Chronic Wasting Disease in Wisconsin: A Progress Report and Look toward the Future* that evaluated results after three years of CWD management.
- Rolley also co-published a book with UW-Madison's Stan Temple and John Cary entitled *Wisconsin Birds: A Seasonal and Geographical Guide.*

Wildlife Surveys

More than sixty wildlife surveys were conducted (most done annually) to monitor wildlife populations, harvest, and hunter participation. This program was managed by Brian Dhuey. In 1995, the Wildlife Surveys Committee was disbanded and the duties assigned to the Wildlife Policy Team, which included Wildlife Management central office staff, Wildlife Management regional supervisors, and a representative from Forestry, Science Services, and Endangered Resources. Any new wildlife survey requested was required to be reviewed and approved by this team before it could be implemented.

Aerial Beaver Survey. Prior to 1990, the DNR monitored beaver populations by counting active beaver colonies along selected rivers and streams from fixed-wing aircraft. While population trends were documented, the technique did not provide estimates of regional beaver populations. When beaver populations reached unacceptably high levels during the 1980s, the Legislature provided funds to the DNR to develop a new beaver management plan.

Bruce Kohn and Jim Ashbrenner tested several sampling strategies involving fixed-wing aircraft and helicopters before designing a new aerial survey capable of providing

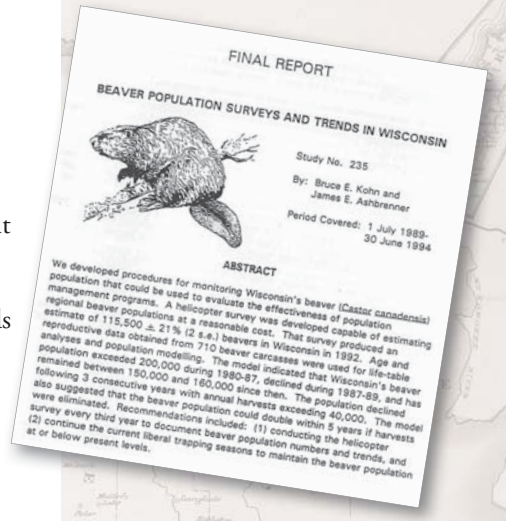
the information on regional beaver numbers and trends necessary to implement and evaluate the new management plan. That survey involved counting all active beaver colonies within 88 four- to six-square-mile blocks randomly located across northern Wisconsin. The number of active colonies observed within these blocks (a total of 475 square miles) was then expanded to estimate the total number of colonies in northern Wisconsin (identified as Beaver Management Zones A and B).

Kohn and Ashbrenner summarized their analysis and results in 1994 in a DNR report entitled *Beaver Population Surveys and Trends in Wisconsin.* The survey was accepted by the Bureau of Wildlife Management and is currently being conducted each year.

Aerial Otter Survey. The river otter was on the brink of extinction in Wisconsin by 1900, and the trapping season was finally closed for 12 consecutive years starting in 1915. The season was reopened in 1927 and remained open through modern times except for one closure in 1954. Throughout this period, the department was dependent on trapper reports and fur buyer records to monitor the population.

Bruce Kohn and research technicians James Woodford and Amber Roth designed an aerial survey that proved reliable for measuring regional river otter population trends and their relative abundance, publishing the results in 2004 in a DNR report entitled *Development of an Aerial Otter Survey in Wisconsin.*

The surveys are flown for one to five days after a significant snowfall with fixed-wing aircraft along 23 30-mile-long transects in each of Wisconsin's three otter management zones. The presence or absence of otter tracks was recorded at all stream and river crossings of each transect. The survey was statistically accurate enough to detect changes within the otter population of only 5% or greater if run for five consecutive years and within 3% if run for ten consecutive years. The Bureau of Wildlife Management is currently conducting these surveys annually.


FINAL REPORT

BEAVER POPULATION SURVEYS AND TRENDS IN WISCONSIN

Study No. 235

By: Bruce E. Kohn and James E. Ashbrenner

Period Covered: 1 July 1989-30 June 1994

ABSTRACT

We developed procedures for monitoring Wisconsin's beaver (*Castor canadensis*) population that could be used to evaluate the effectiveness of population management programs. A helicopter survey was developed capable of estimating regional beaver populations at a reasonable cost. That survey produced an estimate of 115,500 ± 21% (2 s.e.) beavers in Wisconsin in 1992. Age and reproductive data obtained from 710 beaver carcasses were used for life-table analyses and population modelling. The model indicated that Wisconsin's beaver remained between 150,000 during 1980-87, declined during 1987-89, and has following 3 consecutive years with annual harvests exceeding 40,000. The model also suggested that the beaver population could double within 5 years if harvests were eliminated. Recommendations included: (1) conducting the helicopter survey every third year to document beaver population numbers and trends, and (2) continue the current liberal trapping seasons to maintain the beaver population at or below present levels.


Jvon SIVERS

Changing Issues and New Programs

The focus of research expanded greatly for the Wildlife and Forestry Research Section during this period. In addition to conducting standard wildlife population and habitat research for both game and nongame species, larger-scale research was begun on communities of plants and animals and entire ecosystems and on the environmental stressors that affected them.

To aid planning and management, landscape-scale management was investigated to understand how wildlife populations function at larger scales. Researchers played a key role in "Conservation Design," providing information on where and how much habitat might be needed to sustain wildlife populations. Restoration and management of whole ecosystems were being investigated rather than just one or several species. Sustainability became an important consideration, and research into ways to sustainably manage natural resources was undertaken.

Addressing these complex large-scale problems took place mostly in an era of shrinking DNR staff and budgets after 1995. Use of graduate students, college students as interns, and LTEs to collect data during the field season became the norm. Often DNR scientists formed research teams, increasing collaboration with universities and other government agency scientists to address these issues, which required more expertise and funding than was present within the Wildlife and Forestry Research Section. Because of the high demand for collaborative research teams and the ongoing search for funding, some scientists have become more research managers than field researchers. Some of the issues addressed were as follows:

- Significant changes in land use such as lakeshore development in northern Wisconsin required research to determine the impacts and how to restore lakeshores to protect fish and wildlife and their habitat.
- A major highway (Highway 53) was expanded from two lanes to four lanes through the heart of a gray wolf travel corridor from Minnesota to Wisconsin, raising questions if it would prevent wolf immigration into the state precluding a sustainable Wisconsin population.

- Sustainable agriculture was becoming increasingly popular, and opportunities to improve wildlife habitat with these new agricultural techniques were investigated.
- Biomass for energy production was being advanced, and research on the effect of using biomass on wildlife habitat and populations was evaluated.
- Exotic plants and animals were increasingly threatening native plant and animal communities, and research was done to determine impacts and control methods for invasive species.
- When chronic wasting disease was discovered in deer in Wisconsin in 2002, an entire new research program was established to determine the impact of the disease on the deer population and hunters and hunting traditions.
- Wind farms were being developed, and the impact of this new renewable energy source was investigated to determine if collisions by birds and bats with wind power generators was significant. (The planning of wind turbines to be constructed within a few miles of the Horicon National Wildlife Refuge in 2005 attracted public concern because of the high number of migratory birds in the area. Construction went forward, despite Horicon's worldwide reputation as a bird magnet.)

Wildlife Toxicology

A new wildlife toxicology program was initiated in 1991. A position vacancy was redesigned with new duties as a wildlife toxicologist and was filled by Dr. Mike Meyer. Meyer developed a protocol using the bald eagle as a *biosentinel* to Great Lakes ecosystem health. This protocol has been used for Great Lakes bald eagle biosentinel monitoring from 1990 through 2006. The Wisconsin DNR/Michigan State University bald eagle biosentinel protocol has been endorsed by the International Joint Commission and is currently (2005) being evaluated for implementation under the *Great Lakes State of the Lakes Ecosystem Conferences (SOLEC)* program.

The protocol developed by Meyer has been adopted and implemented by several state and provincial natural resource agencies. This database has been queried often by outside natural resource agencies, and data have been used during the FWS Natural Resource Damage Assessment of the Fox River, the EPA's consideration of the Fox River as a Superfund site, development of monitoring plans for the Lake Superior Binational Program, and for Remedial Action Plans for the Green Bay and Superior Areas of Concern.

Meyer and USGS researcher Kevin Kenow are assessing the ecological risk of mercury to common loon populations in northern Wisconsin. The Wisconsin DNR, the USGS, and other collaborators have acquired more than $1.4 million in grants from the Electric Power Research Institute, the EPA, and other sources to conduct this study.

Meyer and Kenow are leading an international research investigation utilizing laboratory dose-response experiments, development of bioaccumulation models and loon population models, and state-of the art field experiments to determine safe levels of mercury in fish to sustain common loon populations. This information will be used by the EPA, Environment Canada, International Joint Commission, and Wisconsin DNR policy makers regarding mercury risk to wildlife and to regulate mercury emissions from electric utilities.

In another study, Meyer is determining the impacts of shoreland development on wildlife habitat on northern inland lakes. Research sponsored by grants from the FWS and EPA has shown that the current zoning standards established by NR 115 Shoreland Management Program do not adequately protect wildlife habitat in northern Wisconsin. Alterations in breeding bird populations and dramatic declines in native vegetation and amphibian populations were noted on developed lakes in Vilas, Oneida, Iron, and Forest counties. This analysis will clarify indicators of sustainability and provide the basis for on-the-ground protection projects such as land acquisition, model ordinances, wildlife habitat needs and restoration, and aesthetic carrying-capacity recommendations.

Biosentinel
A sensitive organism that serves as a warning system when monitored to identify ecosystems impacted by persistent bioaccumulations of toxic substances.

State of the Lakes Ecosystem Conference (SOLEC)
Biennial consultation meeting sponsored by the U.S. Environmental Protection Agency and Environment Canada to gather and assess information about the health of the Great Lakes ecosystem with input from scientists, private corporations, and not-for-profit organizations.

DNR FILE

Research technician Doug Killian (left) and research scientist Mike Meyer investigate the effects of mercury in common loons.

Forestry Research

Prior to the creation of the Wildlife and Forestry Research Section in 1992 (when a new forestry research program was created and combined with wildlife research), the Bureau of Forestry (as it was called then) had contracted needed research to the University of Wisconsin-Madison. The bureau transferred dollars to the Bureau of Research to aid in securing the forestry research it needed (see Funding section above). No positions were transferred since there were no dedicated forestry researchers in the Bureau of Forestry. A vacancy from within the section was used to create a new Forest Ecologist research position in 1992 and was filled by Dr. David Mladenoff in 1993. In conjunction with his DNR position, Mladenoff was also appointed to a zero-cost adjunct position with the University of Wisconsin-Madison's Department of Forestry.

A Cooperative Forest Landscape Ecologist position was created with the University of Wisconsin-Madison in 1996 to conduct and facilitate forestry research. The university provided a position, office, laboratory space on campus, and administrative support. The DNR paid the salary and provided financial and logistical support for research projects. In 1998, Mladenoff resigned from the DNR and accepted the cooperative position at the university.

Karl Martin filled the position vacancy left by Mladenoff in 2000. This relationship has been very productive, leveraging DNR funds with funds only available to the university, which has allowed large-scale complex research projects to be conducted that would have been unlikely by one entity alone.

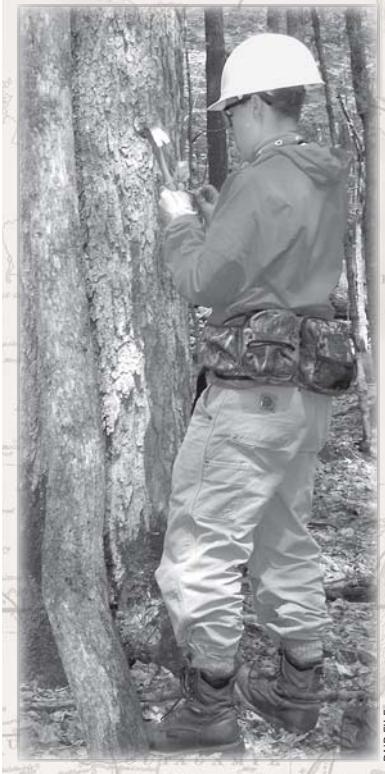
The addition of a forestry research program led to a very productive and innovative forestry research program for the DNR and gave the Science Services program a very strong advocate for science and science-based management.

David Mladenoff, Karl Martin, Jerry Bartelt, and Mike Mossman coordinated a study on sustaining old-growth forest characteristics in northern forest communities while maintaining forest commodity production. In order to refine forest management to accommodate more biodiversity, this project assessed if old-growth (unmanaged) forests differ from managed forests in species composition or ecological processes. The study found that a key difference between managed and old-growth forests is the amount of down and dead woody debris present. Because the DNR can manage for this characteristic, additional study was undertaken to determine how much of a change in coarse woody debris is necessary for an ecological response and what will be the economic cost of leaving additional woody debris in the forest. Forest management practices identified in this study should provide both forest commodity production and enhanced biodiversity of the northern forest ecosystem.

Rich Henderson investigated recommendations for oak management. This study identified likely mechanisms to restore oak forests in southern Wisconsin. It compared the effects of the most promising silvicultural techniques to natural mechanisms (e.g., fire) on both the maintenance of oaks and the whole oak ecosystem. Understanding oak regeneration will aid in the development of effective management strategies to maintain the oak resource, wildlife habitat, and ***natural community*** biodiversity.

Mike Mossman along with University of Wisconsin-Madison professors Dr. Volker Radeloff and Dr. Anna Pidgeon evaluated the effects of houses and roads on abundance and productivity of breeding forest birds in the Baraboo Hills. The Baraboo Hills supports one of the most significant communities of forest-interior breeding birds in the Midwest. Increasing housing development pressures threaten this community yet little information exists for guiding development to minimize its effects. This study measured changes in bird populations and development since 1980 and documented the current relationships between bird abundance, breeding success, and the density of and proximity to houses and roads. Results from this study will be provided to local and regional land use planning agencies and boards, landowners, land trusts, and conservation agencies to help identify and minimize the effects of exurban development here and in other forested Midwestern landscapes.

Dr. David Mladenoff and Andy Stoltman developed a visualization tool for forestry management practices. This study developed and linked computer programs that

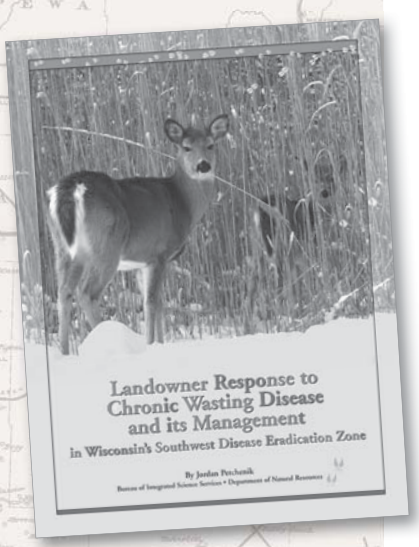


DNR FILE

Natural community
Plants and animals that share a common environment and interact with each other.

Geographic information system (GIS)
Computer systems (hardware, software, networks) for the input, editing, storage, retrieval, analysis, synthesis, and output of location-based information.

Infectious Prions
Abnormally folded proteins that can infect healthy proteins, causing brain damage. Infectious prions are recognized as the cause of mad cow disease and chronic wasting disease in deer. Prion diseases progress rapidly and are always fatal.



allow visualization of forest data at the stand and near-landscape scales to virtually "see" forest change under different management scenarios. This tool will make it easier to discuss and show the public the likely outcome of different proposed management strategies and is useful in helping the public understand management practices being proposed in master planning.

Dr. Mladenoff also developed a new map and analyses of presettlement vegetation. An electronic database was developed from the original survey notes of the federal General Land Office surveyors for Wisconsin. Subsequent analyses of these data combined with modern *geographic information systems (GIS)* data layers (e.g., soils, wetlands, etc.) were used to better understand what the vegetation in Wisconsin was like prior to European settlement. The database and analyses resulting from this project are being used in setting defensible goals for deciding on the locations and priorities for forest and wildlife habitat restoration, biodiversity maintenance, old-growth restoration and management, and other uses.

CWD Research

In 2002, when chronic wasting disease was discovered in Wisconsin, a new research program was established to address this important issue, and funds were reallocated to carry out the research. An interagency CWD research subteam was established and chaired by Jerry Bartelt from 2002–07. The goal of this group was to coordinate and disseminate new CWD research information and form research collaborations wherever possible.

Wisconsin partners and the DNR conducted at least 34 CWD research studies to learn more about the disease and its effects and guide future management decisions. Studies done by the University of Wisconsin and other partners included research into the molecular biology of *prions*, infectivity of prions in soils, geographic patterns of the disease across the landscape, distribution and movement of deer, concerns for human health, new diagnostic tests, and hunter and landowner effort and attitudes. This group also provided recommendations on how DNR dollars should be spent for CWD research in Wisconsin. This research program provided the science needed to manage CWD in Wisconsin.

Grasslands/Agriculture Research

Jerry Bartelt and Dave Sample along with University of Wisconsin-Madison agronomist Dr. Dan Undersander, Laura Paine (then with the University of Wisconsin-Extension), and Coop Unit leader Dr. Chris Ribic coordinated studies to investigate agricultural environmental problems while maintaining farm profitability. These studies attempted to help solve these problems without jeopardizing farm profitability or increasing environmental regulations on private land. Five research studies were conducted:

1. Profitability of rotational grazing and impacts on grassland birds
2. Profitability of rotational grazing and impacts on aquatic and terrestrial ecosystems in riparian habitats
3. Use of switchgrass as a biofuel for electric power generation and its impacts on the environment
4. Testing native grass species for agronomic productivity for pastures or energy biomass
5. Evaluating grassland bird population response to the multi-million dollar Conservation Reserve Enhancement Program.

As a result of this research, the federal Natural Resources Conservation Service (NRCS) developed a Best Management Practice to allow rotational grazing as a practice for fields enrolled in the federal Environmental Quality Incentives Program and is considering it for the federal Conservation Reserve Program.

NRCS is further considering the practice of leaving a nesting refuge for grassland birds in rotational grazing systems for inclusion in the national Conservation Reserve Program. Additional research into the impacts of the "Use Value" taxation to lower

agricultural taxes resulted in testimony at a legislative hearing to change this policy in Wisconsin.

Ron Gatti and Dave Sample evaluated landscape-scale management in the Habitat Restoration Area program in east-central Wisconsin. Gatti also demonstrated the use of GIS as a planning tool for wildlife management at a landscape scale, a first in the early 1990s. He evaluated the impact of the Knowles-Nelson Stewardship Fund's Habitat Restoration Area program by patterning wetland and grassland habitats for key wildlife species across south central Wisconsin.

Gatti's study developed spatial databases using GIS and used them in models to predict where to restore grassland and wetland habitat to optimally benefit pheasants, ducks, and nongame grassland birds. These spatial models were delivered to the Bureau of Wildlife Management to guide their acquisition and management programs. This study then documented the wildlife response to the management implementation, providing evaluation of program benefits for wildlife that will be useful for future wildlife management on private lands.

Rich Henderson determined the distribution and management of prairie invertebrates in the upper Midwest. A five-state (Wisconsin, Minnesota, Iowa, Illinois, and Ohio) cooperative composed of state, federal, and private partnerships conducted the study. This study developed species lists of potential Wisconsin and Midwest prairie macroinvertebrates; developed lists of species or taxonomic groups that have a high degree of probability of being remnant-restricted specialists; determined which species are truly remnant restricted and how they are affected by remnant size, isolation, and management; and provided information on the distribution and status of prairie-dependant insects.

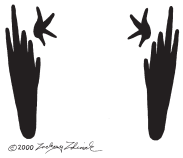
The information from Henderson's study was critical for making land acquisition and management decisions that could maintain the invertebrate portion of an endangered ecosystem. The prairie invertebrate study resulted in discovery of species new to science, in several species being listed as endangered/threatened species, and in modified burn strategies to protect fire-sensitive species, and it was used to develop the "Incidental Take" policy for grasslands in the state.

Nongame Studies

Steve Ugoretz and Jerry Bartelt, assisted later by Sumner Matteson, Shari Koslowsky, David Redell, and others prepared department guidance on placement of wind farms to minimize bird and bat mortality. Wind turbines were being constructed to generate commercial electric energy in Wisconsin. Because of documented mortality to bats from collisions with wind turbines, there was increasing concern for bats, especially those that occur in high densities.

More information was needed on the timing of bat migrations and to identify the migratory corridors used when flying to and from ***hibernacula*** (Dr. Scott Craven and graduate student David Redell conducted these studies). With this information, wind turbines could be sited in areas that will cause little harm to bat populations. At the Neda Mine bat hibernaculum, peak bat migration occurs during a relatively short period of time (two weeks) in the spring. It may be possible to predict when bat migration will occur and not operate wind farms during the evenings when bats are migrating.

Mike Mossman and Bureau of Research scientist Ruth Hine developed the Wisconsin Frog and Toad Survey (WFTS) in the 1980s. This survey served as a model for the continent-wide survey developed by the USGS for the North American Amphibian Monitoring Program (NAAMP). Comparison between the two surveys identified biases and made data previously collected by WFTS comparable to NAAMP data. The Wisconsin frog and toad survey and research was also used as a model for Canada's national amphibian surveys. A Web site that includes WFTS data was developed that allows managers and the public to easily access these data.



Hibernacula
Protective places for wintering organisms.

COURTESY OF J REDELL

David Redell, bat ecologist in the Bureau of Endangered Resources, dedicated his life to the conservation of bats.

DNR FILE

Deer and Elk Studies

Jonathan Gilbert (Great Lakes Indian Fish and Wildlife Commission) along with researcher Brian Dhuey and Keith Warnke (Wildlife Management staff) developed a habitat suitability model for elk in the state to identify and evaluate the potential for establishing new elk herds.

Robert Rolley and Chris Jacques are evaluating the department's deer population monitoring and management systems. This study investigates the accuracy of SAK model population estimates and harvest predictions including evaluating impacts of input variables and explored other population models to determine their effectiveness to estimate deer populations. This study should improve the public's understanding of the accuracy and precision of the current deer population monitoring and harvest management system. It will also develop procedures that will improve the precision of this system. Maintaining deer populations closer to goal levels will reduce the negative social and ecological consequences of overabundant deer populations while maintaining opportunities for harvest and wildlife viewing.

Wolf Studies

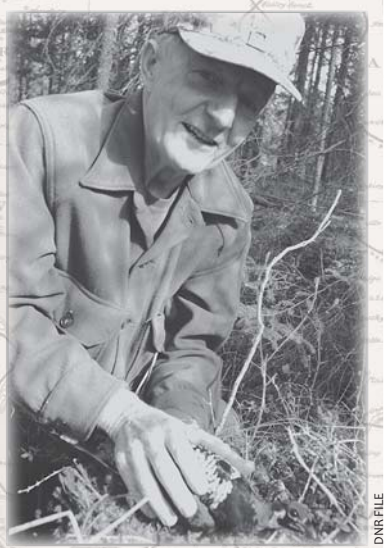
Researcher Bruce Kohn conducted a study in 1998–99 to determine the impacts of highway development on wolves. The project assessed the impacts of the U.S. Highway 53 expansion project on gray wolf populations and dispersal, identified critical habitats and travel corridors, and developed guidelines to mitigate the impacts of future highway development projects on wolves in the Great Lakes Region and northeastern United States. The study resulted in changes in Department of Transportation vegetation management along the road corridor and identified likely crossing places for wolves that will be used to design future road projects in wolf range in the future.

Upland Game Bird Studies

In 1996, Keith McCaffery, Jim Ashbrenner, Bill Creed, and Bruce Kohn reported on a long-term (28 years, from 1967 through 1994) study of ruffed grouse on the Stone Lake Experimental Area that described the integration of forest and ruffed grouse management. The results will improve land management methodology for ruffed grouse for public and private land managers.

LeRoy Petersen evaluated the feasibility of using first generation (F1) descendants from wild pheasants raised at the Poynette Game Farm for releases to establish viable populations of ring-necked pheasants on suitable sites. This study found that stocking F1 pheasants into suitable habitat did not increase the pheasant population. This finding could save the department more than $100,000 a year in costs.

Dave Sample investigated management options for grassland birds in southwest Wisconsin agricultural landscapes. This research developed management recommendations for grassland biota in an active agricultural landscape at a variety of scales, from individual farms to landscapes. The results of this study were useful to natural resources agencies and conservation groups as they implement landscape-scale grassland management in the Military Ridge Prairie Heritage Area and elsewhere in southwest Wisconsin.



DNR FILE

Wildlife researcher Keith McCaffery.

Waterfowl Studies

Ron Gatti evaluated factors limiting duck production and survival in the Great Lakes Region. This study filled a critical gap in our knowledge about duck productivity on private lands in southern Wisconsin. Using radio telemetry, the study directly estimated the survival and recruitment of ducks on the private landscape of southern Wisconsin where wetlands and grasslands have been restored so that population models can be developed for mallards and blue-winged teal to predict population change. This study also tested the basic assumptions of DNR's management for ducks: that their recruitment is limited by the abundance of grasslands and wetlands. It refined planning tools for management of mallards and blue-winged teal in the "Upper Mississippi River Great Lakes Region Joint Venture of the North American Waterfowl Management Plan."

Bill Wheeler developed surveys that provided resident Canada goose breeding pair estimates, average brood size, and other data needed to model fall resident goose populations; identified the proportion of giant Canada geese in the annual fall goose harvest in Wisconsin; and identified harvest and damage abatement strategies. His study increased accuracy of resident goose density estimates and permitted greater flexibility in goose population management, thereby increasing recreational opportunities. The resident Canada goose research resulted in additional hunting areas and seasons being added to control this rapidly expanding species.

Wisconsin Cooperative Wildlife Research Unit

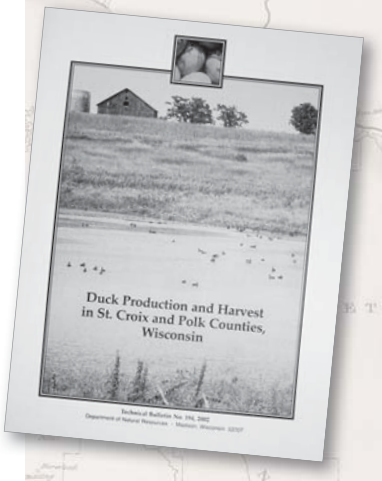
A strong relationship with the Wisconsin Cooperative Wildlife Research Unit at the University of Wisconsin-Madison, led by Dr. Donald Rusch, continued throughout this period. Many publications resulted from the long-term studies of Canada geese and ruffed grouse. As a result of work by agencies in the Cooperative, including the DNR, the Coop Unit was expanded by the addition of an assistant unit leader, Dr. Christine Ribic, in 1994.

With the addition of a second person, the Coop Unit was able to start research on survey techniques and ecology of waterbirds at Horicon Marsh, especially rails and terns, and on wildlife use of buffer strips in southwestern Wisconsin. Shortly thereafter (1995), Don Rusch and Scott Craven initiated a nationally recognized course for mentoring new hunters. After the untimely death of Dr. Rusch in 1999, Dr. Ribic was appointed as Coop Unit leader. Dr. Mike Samuel was hired to replace Ribic as the assistant. They both emphasized and maintained a close working relationship with the DNR and its research staff.

The Coop Unit worked with the DNR to provide support for the Glacial Habitat Restoration Area project. Other collaborative projects with the Coop Unit during this time included the following:

- Studies of grassland birds in agricultural landscapes as well as several studies on CWD
- Agricultural landscape studies evaluating the effect of short-term rotational grazing by cattle on bird nests
- Landscape-scale effects on grassland bird nesting as well as studies on ***herptiles***, small mammals, and potential grassland bird nest predators in grasslands
- Evaluating the effect of removing tree rows to enlarge grassy habitat on grassland birds and mammals, which became an important collaborative project for the DNR and Coop Unit as well as for other state and federal partners

Dr. Mike Samuel played a key role in CWD studies, conducting epidemiological and modeling research on disease transmission, researching ***landscape genetics*** of deer in relation to the disease, determining the geographic patterns of the disease across the landscape, designing a monitoring program to track the disease, and advising on many management questions regarding CWD. The Coop Unit provided this critical information needed by the department during this period.



Herptiles
Reptiles and amphibians.

landscape genetics
A discipline that bridges landscape ecology and population genetics to study how landscape and environment influence population genetic structure. For example, rivers can be a barrier to animal movement and thus gene flow, resulting in different genetic population structures on either side of the river.

Other Collaborative Research

During this period, the use of contracts with universities to conduct research increased greatly. With an expanded research agenda, more complex problems, and decreased staff, needed expertise and personnel were often contracted with universities. At times, over 20 research contracts were written with universities each year and included the following topics:

- Comparing old-growth forests to managed forests
- Sustainable agriculture
- Use of Scottish Highland cattle to restore oak savanna structure
- Prairie invertebrate research
- Turkey survival
- Reanalyzing presettlement vegetation
- Visualization of the effects of forest management
- Impacts of wind farms on birds and bats
- Impacts of mercury on wildlife

After the discovery of CWD, contracts were used to investigate deer movements and behavior, spatial analysis of where the disease occurred, hunter effort to reducing the deer population, and landscape genetics as it related to the disease. Considerable human dimensions work was also undertaken with a variety of external partners. Collaboration with universities and other agencies was the way of doing business to accomplish an ambitious research agenda on these complex problems.

Dr. David Drake (UW-Madison) has been actively involved in prairie chicken research and management with the DNR, and Dr. Tim Van Deelen (UW-Madison) has collaborative projects with the DNR on deer, bear, wolves, and American marten. Dr. Scott Craven (UW-Madison) has also collaborated on many projects such as bat ecology and management and has facilitated and led agency efforts on controversial topics such as urban Canada goose management, turkey damage to farm crops, and CWD management for white-tailed deer.

Dr. Eric Anderson (UW-Stevens Point) collaborated with Bruce Kohn with a series of students working on the U.S. Hwy 53 Wolf Study to determine the effect that expanding the highway from two to four lanes would have on gray wolf dispersal and survival.

DNR scientists began serving on university graduate committees and obtaining adjunct positions with universities during this time period. Bruce Kohn and Keith McCaffery were listed as "university associates" with the University of Wisconsin-Stevens Point. Kohn served on a number of graduate student committees. McCaffery served on the University of Wisconsin's Kemp Station Advisory Committee. Mike Meyer had adjunct positions with the University of Wisconsin-Madison, University of Wisconsin-La Crosse, and University of Minnesota, while Karl Martin and Chris Jacques had adjunct status with the University of Wisconsin-Madison.

Karl Martin, Dave Sample, Mike Meyer, and Jerry Bartelt served on graduate student committees over these years. Mike Meyer taught a semester-long course at the University of Wisconsin-Madison in 1995 entitled "Principles of Wildlife Management," and Jerry Bartelt was a regular guest lecturer in the University of Wisconsin-Madison's "Principles of Wildlife Management" course for over ten years. Robert Rolley has been a regular lecturer in the University of Wisconsin-Madison's "Wildlife Techniques" course and a "Population Dynamics" course at the University of Wisconsin-Stevens Point. Bureau colleague Dreux Watermolen guest lectured on amphibian reproductive ecology in the University of Wisconsin-Madison's "Vertebrate Natural History" course annually during this period. Jordan Petchenik also regularly lectured on human dimensions of wildlife management and survey techniques at UW-Madison and UW-Stevens Point.

Assistance to Other Programs

Wildlife and forestry researchers remained a critical part of management decision making with scientists who served on all the Wildlife Species Advisory committees providing the science-based information needed for harvest and population management decisions for a variety of programs.

- Robert Rolley was a key advisor providing scientific data for two audits: investigating the validity of deer population estimates for the Natural Resources Board and investigating the DNR's CWD management program requested by the Legislature.
- Dave Sample played a key role in providing scientific advice on questions from the Society for Tympanuchus Cupido Pinnatus regarding the DNR's management program for prairie chickens.
- Bruce Kohn and Robert Rolley played important roles in developing the controversial wolf management plan. Rolley did the population viability analysis upon which population goals were partially based.
- Robert Rolley, Karl Martin, and Jordan Petchenik were heavily involved in Deer 2000, a large public involvement program to determine options for deer management in the future.
- Robert Rolley, Keith McCaffery, and Brian Dhuey were involved in teaching many training sessions, including training new wildlife biologists and new warden recruits, and teaching at the "Fur School" workshops at which participants learn how furbearers are caught, prepared, sold, and protected under Wisconsin law.
- When poor hunting conditions occurred during the 2000 gun season and harvests were reduced, it resulted in considerable hunter dissatisfaction. Many hunters complained that they did not see deer and concluded that populations had been overharvested. These complaints led the Assembly Natural Resources Committee to create a subcommittee on deer and deer management. The subcommittee held five hearings across the state in late winter 2001. Robert Rolley provided data, tables, and graphs used as displays in the hearing rooms. He attended three of the five hearings and gave a brief explanation of the SAK process to the subcommittee and also sent the subcommittee a memo on buck harvest density geographic patterns in the Midwest and changes to those patterns during the 1980s through 2000.

  These hearings were well attended by deer hunters, many expressing their dissatisfaction with the number of deer seen during the season. Most hunters who testified complained about recent efforts to reduce populations with high antlerless harvests and the use of October and December antlerless seasons; questioned the accuracy of deer population estimates; and insisted that population goals were too low. Other topics discussed included baiting and feeding and proposals to lengthen the traditional nine-day gun season. Following the hearings, the subcommittee took no further action.
- Wildlife and Forestry Research Section scientists were also a critical part of several large-scale planning efforts during this period. Bob Dumke participated on several interagency groups evaluating ecoregional concepts, one resulting in a publication with Jim Omernick of the U.S. Environmental Protection Agency on ecoregions of the North American continent.
- Dumke also participated on the national "Keystone Group," which published *The Keystone National Policy on Ecosystem Management* in 1996.
- Jerry Bartelt participated on many projects, including the Land Legacy project, which determined what lands needed to be protected for ecological and recreation needs in the next 50 years; the Northern State Forest Assessment-Regional Ecology study to aid master planning of State Forests; and the Ecosystem Man-

PHOTOS: DNR FILE

"Fur school" training workshop.

agement Planning Team, which described the ecological and socioeconomic conditions for the 16 ecoregions in the state to suggest management opportunities that are compatible with each region's ecology. He also chaired the Science Group for the State Wildlife Action Plan, which many Wildlife and Forestry Research Section staff contributed to. The plan set priorities and is used to allocate dollars for a new funding source primarily for nongame species. Bartelt was also involved in writing a science-based management plan for the DNR.

- When CWD was discovered in Wisconsin in 2002, Wildlife and Forestry Research Section staff were heavily involved in developing the management response to control CWD (e.g., how big does an eradication zone need to be to contain the disease based on deer movement, what is the likely effect of disease transmission from baiting and feeding, how low are hunters likely to take the deer herd before they give up).
- *Environmental Impact Statement on Rules to Eradicate Chronic Wasting Disease in Wisconsin's Free-Ranging White-tailed Deer Herd* was published in 2003 with Jerry Bartelt and Kurt Thiede (Wildlife Management staff) and Jim Pardee (environmental analysis and review specialist) as lead editors and multiple authors (Rolley and Van Deelen) contributing from the Wildlife and Forestry Research Section. When the Interagency Health and Science Team was established in Wisconsin, wildlife and forestry research staff (Rolley, Bartelt, Van Deelen, and Jacques) were heavily involved. Rolley chaired that team from 2006–08. Dhuey and Rolley were also active participants on a "Herd Reduction" team.
- Into the 1990s, John Kubisiak from research along with Wildlife Management Bureau representatives Tom Howard, Bill Vander Zouwen, and Ed Frank represented Wisconsin on the National Wild Turkey Federation Technical Committee evaluating various university and agency research projects and funding levels for the National Wild Turkey Federation research grants program.

Some scientists were also appointed to regional and national committees. All these developments improved the stature of the DNR's research program and scientists and aided in forming research teams and in securing additional outside grant dollars as well as providing valuable input for Wisconsin needs.

- Bob Dumke started the Midwest Wildlife Supervisor Group in the 1980s, and the Wildlife and Forestry Section chief has represented Wisconsin since then. It has been a valuable group for the exchange of research information and solving research problems around the Midwest.
- Mike Meyer was appointed as a member of National Science Advisory Board of Review for the EPA's Mercury Report to Congress in 1997; organized and chaired the Electric Power Research Institute's Wildlife Mercury Conference in Washington, DC, in 1997; and was a guest editor for *Environmental Toxicology and Chemistry* journal special issue *Mercury in the Environment* in 1998.
- Ron Gatti was appointed to the Upper Mississippi River and Great Lakes Region Joint Venture Technical Committee and participated on several Mississippi Flyway Technical Section committees.
- Jerry Bartelt served on an Interagency Committee on Ecosystem Management for the upper Midwest, the Binational Wildlife Committee for the Lake Superior area in the U.S. and Canada, and the Association of Fish and Wildlife Agency's Science and Research committee.
- Karl Martin was appointed to The Wildlife Society Editorial Board as an associate editor for the *Journal of Wildlife Management* from 2002–04.

Throughout the period, Wildlife and Forestry researchers remained a critical part of management decision making by providing the science-based information needed for a variety of wildlife and forestry programs.

Species Management

The basic wildlife management regime had been established 20 years before using species advisory committees to guide program decisions and identify management strategies and was still functioning well through 2005. Wildlife managers, wildlife technicians, and researchers served on these committees to ensure that the best data and management techniques were available to guide the program.

Fish, wildlife, and habitat management for a six-year planning horizon was completed in 2001 and updated in 2004. The plan addressed specific features of the DNR Mission, implemented four goals of the DNR Strategic Plan, and outlined elaborate activities for achieving numerous management objectives. The plan focus included the following:

- **Making people a strength –** Internal staff competency, partnering with the public, and employee safety activities
- **Sustaining ecosystems –** Methodology and activities for managing a variety of terrestrial and aquatic habitats
- **Outdoor recreation –** The traditional substance of agency activities oriented around specific fish, wildlife, and endangered resources. Watchable wildlife, user conflicts, public access, and user satisfaction objectives were also identified.

The major wildlife emphasis remained on game, with white-tailed deer, black bear, elk, wild turkey, ring-necked pheasant, ruffed grouse, sharp-tailed grouse, waterfowl (including geese and other migratory game birds), and beaver receiving specific management prescriptions. The new Wisconsin Bird Conservation Initiative (described in Chapter 10, page 336) expanded the management scope beyond game species and showed promise to be one of the most important and enduring programs of the new millennium.

In 2005, the Fish and Wildlife Service's Federal Aid Section recommended that all states complete a Comprehensive Fish and Wildlife Conservation Plan to improve the efficiency and effectiveness of the operations. This was an opportune time for both functions in the Wisconsin DNR to update the status of a variety of species needing attention. A plan was developed through a series of public forums and is described for wildlife management in Chapter 10.

PHOTOS: DNR FILE

Deer Management

Managing deer in Wisconsin probably should be more properly called "defending deer science in the political arena." The tumultuous times the program endured between 1992 and 2005 encompassed so many historical events that a separate chapter is required to adequately describe what took place.

Chapter 9 covers the more recent years of this important part of the wildlife management program. It includes the administration and regulatory actions required to manage the deer herd. It also describes the series of events that occurred as the agency and the public embarked on solving the most serious wildlife health problem that ever occurred in Wisconsin's history—chronic wasting disease.

Black Bear Management

Bear researcher Bruce Kohn retired in 2004. His innovative bear population model, harvest strategies, and tireless education of Wisconsin bear hunters undoubtedly contributed to the success of the current program. Game manager Mike Gappa retired the same year, leaving a bear expertise void in west central Wisconsin. The wildlife and research staff continued to maintain communications with the Minnesota and Michigan bear programs.

Black bears are now common in the forests of northern and central Wisconsin. Dispersal of bears into some southern counties occasionally occurs, but conflicts with people likely will prevent permanent expansion into this area. The population model developed by Kohn coupled with bear bait station transects continues to work well in keeping track of bear numbers and establishing harvest objectives.

PHOTOS: DNR FILE

Wildlife managers measure the head of a tranquilized black bear.

The bear population goal was increased to 12,000 in the 1990s, more than double that of the previous decade. The goal was revised in 2001 to 10,900 to reflect a more realistic target. The annual bear harvest in recent years has averaged 3,000 bear with over 50,000 applicants competing for about 4,500 permits. Lake Superior Chippewa hunters kill about 50 bears annually.

A rather fascinating side note about bear numbers is that bear hunters perceive the DNR's bear population estimate in the neighborhood of 10,000 to be too *low,* a somewhat ironic phenomenon considering the fact that deer hunters observing very abundant deer numbers in the neighborhood of 1.5 million are sure the DNR's estimates are too *high.*

A new issue surfaced after 2000. Reports of bear-hunting dogs being injured or killed during the chase were on the rise. The evidence presented pinned the blame on the growing wolf population. Most bear dog owners have an emotional attachment to their hounds. Further, the dogs tend to be expensive to purchase and maintain, especially when radio-collars are used to track their location during the hunt. The increased loss in the woods stimulated bear hunters to start pushing for lower timber wolf numbers. In addition, bear hunters expected to be reimbursed by the Endangered Resources Fund for any dogs killed by wolves.

The Wisconsin Bear Hunters Association (WBHA) has matured into a highly organized group keenly interested in improving the image of their sport and watching out for the general welfare of Wisconsin's largest carnivore. Over the years, they developed a powerful legislative lobbying ability and a regular contact schedule that kept legislators informed of black bear issues. As importantly, WBHA members quickly responded to landowner complaints to correct problems and educate them on their sport.

The WBHA has also encouraged youth hunting in the sport by successfully lobbying for a new law in 2004 creating a "youth transfer authority" that allows adult hunters to transfer their bear hunting permits and tags to those between the ages of 12 and 17. They also successfully lobbied for a new law in 2005 that authorized two bear hunting permits and tags to be given to the WBHA each year for public raffle. The money generated by the raffle is earmarked for bear research and management.

Elk Management

The political and citizen promotional campaign primarily responsible for the reintroduction of elk in Wisconsin is presented in Chapter 11. Elk reintroduction was force-fed to the DNR and wildlife biologists who were concerned that the activity was premature and carried high risks to deer management objectives. That is not to downplay the vital role that agency personnel contributed along the way to this success story. The evolving program serves to demonstrate that the private sector is fully capable of influencing DNR decision making.

Canada Goose Management

Canada goose harvest strategies continued to guide goose management in the state using the simplest system possible for accommodating hunting recreation. Monitoring nesting success and summer populations as well as participating in Flyway Council activities are important ongoing priorities. Working with local government and individuals to address Canada goose damage problems has also become a priority activity.

Tom Hauge and Jon Bergquist represented Wisconsin on the Mississippi Flyway Council in the 1990s. When Bergquist retired March 29, 2002, he agreed to work part time until his replacement was hired. That part-time commitment lasted almost two years. Kent Van Horn became the new waterfowl biologist on staff in January 2003 and took Bergquist's place on the Flyway Council's Technical Section.

Geese hunted in Wisconsin include Canada geese and snow geese. Canada geese consist of *Branta canadensis interior* (sometimes called "interiors" or "small geese") primarily from northern Ontario and *Branta canadensis maxima* (giant geese, a species much larger than interiors) that are mostly ***resident geese*** produced in Wisconsin. When flock relocations occurred in the 1980s, giant Canada geese were a small

DNR FILE

Resident geese
Geese that nest in the state.

fraction of the total Canada goose harvest. Their populations have virtually exploded and now account for over half the total harvest in the state.

Not all smaller Canada geese currently migrating through the state are from the Mississippi Valley Population (MVP) cohort. Prior to 2000, band returns indicated 46–48% of the geese killed in the state were MVP birds, about 50% were giant Canada geese, and about 2–4% were from other goose populations. The winter population goal for the MVP during this period was 375,000, and the spring population goal was 900,000.

The Canada goose harvest is allocated to "major" and "other" states and Canadian provinces in the Mississippi Flyway. The current management plan guidelines allocate an 80,500 MVP harvest quota to the "other" category of states and provinces. The balance of the harvest quota is allocated to four "major" harvest states using the following formula: Wisconsin – 35%, Illinois – 33%, Michigan – 20%, and Kentucky – 12%.

The 1992 MVP spring breeding survey indicated a substantial decline in the goose population. To compound the problem, a late June snowstorm on brood-rearing areas in Canada was devastating to gosling survival. This resulted in reduced Canada goose quotas for the Flyway. The new Wildlife Management Bureau director, Tom Hauge, had to announce the news at the 1992 statewide Conservation Congress meeting. Coupled with a bad deer prognosis, the circumstance for his first appearance in front of this group couldn't have been much worse.

Wisconsin goose hunting participation fell to about 64,000 hunters in the fall of 1992. Season changes included an earlier, split goose season in six eastern counties (September 1–4 and 8–10) and incorporating Pine Island and Theresa goose management zones into the Horicon Zone. The regular season harvest was reported at about 52,000 Canada geese.

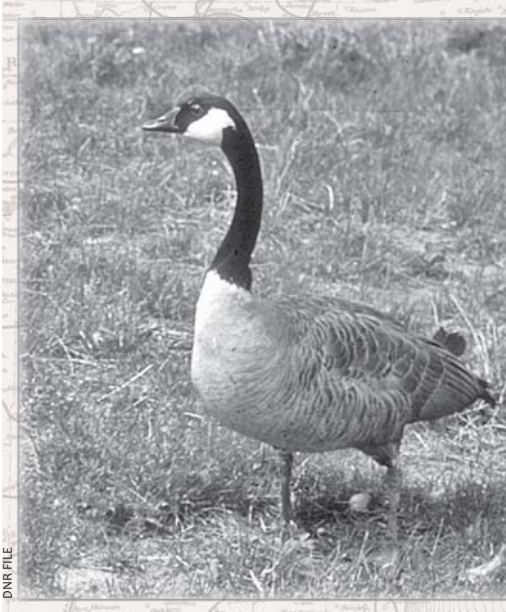
The Canada goose harvest control program initiated in 1988 for the Exterior Zone continued into the 1990s. Mail-in report cards served to monitor the harvest, and emergency rule provisions were in place to close the season when harvest was close to the assigned quota. Unfortunately, hunter compliance wasn't good (mailed cards were "lost" by the post office). Horicon and Collins zones continued to use permits and tags to control the harvest. The mail-in cards were still used in 1995, but hunters had the option of using a free 1-800 telephone number to report their harvest within 48 hours of killing a Canada goose in the Exterior Zone. The mail-in method was eliminated the following year, and all Canada goose hunters had to report the harvest through the 1-800 system.

Subsequent improvement in waterfowl breeding conditions in the Canadian provinces and prairies in the United States led to rapid recovery and more liberal harvest quotas through 1997. Canada goose hunter numbers remained in the neighborhood of 60,000 to 70,000. Horicon Zone permit levels were in the 32,000–35,000 level from 1992 to 1997, with most of the remaining permits issued for the Exterior Zone.

Statewide Canada goose harvest varied yearly after 1997 based on the state's assigned quota received from the FWS. The percentage of the MVP geese (primarily from northern Ontario) in the harvest declined through 2007 as resident geese (those nesting in Wisconsin) continued to increase. The giant Canada goose harvest was 80% of the total Canada goose harvest within all Mississippi Flyway states by the 2007 season.

The early September Canada goose season was primarily established to control metropolitan geese and continues today. The zone boundaries were expanded to include more of eastern Wisconsin in 1995 and all or parts of 22 more adjoining counties in 1996. The initial ten-day season was extended to 15 days after 1996 and applied statewide in 2003. The harvest exceeded 14,000 by 2005. In recent years, urban goose "round-ups" have been conducted and carcasses donated to state food pantries. Ninety percent of the urban goose harvest is composed of giant Canada geese.

The annual goose quota for the Horicon Zone steadily declined from 27,356 in 1998 to 21,268 in 2002. The quota returned to the 30,000 in 2004 and 2005. In general, four hunting periods were offered in the Horicon Zone, and hunters were restricted to two Canada geese per season. The trend for geese to be more widely dispersed in the state continued.



DNR FILE

Throughout the 1990s and into the new millennium, the mid-continental population of snow geese continued to grow while the numbers of migrating geese coming through Wisconsin declined. Snow goose production in Canada increased to levels damaging to breeding habitat for both snow geese and Canada geese. Concern about the overpopulation of snow geese generated liberal hunting seasons in the states by the Fish and Wildlife Service including spring seasons that hadn't been used since the turn of the century. Wisconsin did not participate in the spring hunting option.

Duck Management

The North American Waterfowl Management Plan, Wisconsin's segment of the Upper Mississippi River and Great Lakes Joint Venture, and Wisconsin's strategic plan (comprehensive planning system) guide the management of ducks in the state. The same flyway system used to manage geese is used to assess annual duck populations and to establish the federal hunting season framework each fall. In turn, the state can establish regulations of its own provided the rules comply to or are more restrictive than the federal standards.

Wisconsin duck production primarily consists of mallards, blue-winged teal, and wood ducks. Each April and May, wildlife biologists fly an aerial transect to count breeding waterfowl statewide. Ground counts are also made to back up the aerial survey. About 500,000–600,000 breeding ducks are counted on average with mallards and blue-winged teal the two primary breeders, meaning Wisconsin populations are healthy and responding well to habitat conditions and regulations.

Because of the drought effects from the 1980s, duck hunters saw the return of conventional bag limits in the 1990s. Canvasback and redhead populations remained at low levels, and bag limits were restricted accordingly. Bluebills (scaup) experienced long-term declines and also required a bag limit restriction. The 1992 and 1993 duck seasons were only 30 days in length with a daily bag limit of three. In 1994, the season length increased to 40 days, but the daily bag limit remained three.

Although duck hunters recognized that duck numbers were down substantially, considerable debate over the severity of the season restrictions took place in all states in the Mississippi Flyway. The debate carried over into the Flyway Council and Technical Section meetings and became very contentious into the 1990s.

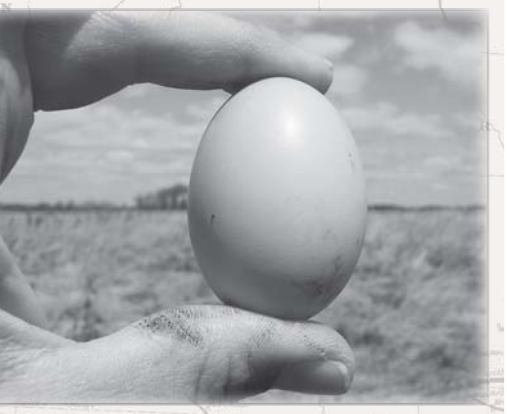
Gradually, breeding conditions improved along with the duck population. The continental fall flight was 77 million ducks in 1995 and 83 million in 1996. Wisconsin's 1996 duck population was the highest it had been in 24 years. The season length expanded to 50 days with a daily bag limit of five for both years. Special bag limits continued to be applied to certain species.

Nineteen ninety-seven was a breakthrough year for ducks. With breeding conditions restored to normal levels on the Canadian and United States prairies, the Mississippi Flyway Council stretched the season length to 60 days and increased the daily bag limit to six ducks, again with special limits on certain species. That basic framework stayed in effect for the next eight years—a record for consecutive seasons.

The opening date for duck hunting in Wisconsin has traditionally been on the Saturday nearest October 1. Hunters generally support that opening date. The real rub is over how the total season length is applied. One group in the southern part of the state supports splitting the season to take advantage of northern diver flights that often don't occur until late November. Another group in the north opposes the split because lakes are usually frozen over in late November.

The DNR's solution to the split season problem the last 40 years or so has been to create a boundary line across the middle of the state creating a north and south zone for duck hunting. One consecutive-day season applies to the north and two different consecutive-day seasons separated by one week of closure is used in the south. The week closure has the effect of allowing southern duck hunters to hunt one week later in the zone.

While this basic season structure has resolved most of the problem, duck hunters still argue for a number of variations each year. For example, northern hunters were



PHOTOS: DNR FILE

successful in opening their season one week earlier in 2004 and 2005 but were concerned with the influx of southern hunters coming north for the earlier opener.

Technology that has greatly enhanced the efficiency of hunting and fishing over the years is viewed by an increasing number of hunters to be negatively impacting the "fair chase" ethic. Semi-automatic shotguns, better ammunition, range finders, mass produced duck and goose calls, and much improved equipment has changed the sport dramatically. For duck hunters, the introduction of "robo-duck" decoys at about the start of the millennium has created some controversy.

The robo-duck decoy employs spinning wings that give it a very realistic motion extremely effective in attracting approaching ducks. If hunters with decoys were side by side, one using robo-duck and one not, observations indicate that more ducks are attracted to the robo-duck spread. Some states have already prohibited robo-duck decoys on the basis that they are an unfair advantage to the hunter.

Saving and enhancing good wetland and adjacent upland nesting cover are still keys to waterfowl abundance. Agricultural programs like the Cropland Retirement Program, Water Bank Program, Wetlands Reserve Program, and the Conservation Reserve Enhancement Program are critical for ducks and provide great benefits for other ground nesting species. Cooperative efforts between the governmental agencies including the DNR, FWS, and USDA need to continue to optimize limited budget and labor resources.

The state waterfowl hunting stamp generated an average of $506,000 per year from 2000 through 2006. As required by law, wildlife biologists spent 67% of the funds developing, managing, preserving, restoring, and maintaining wetland habitat for producing waterfowl and ecologically related wildlife (like yellow-headed blackbirds, marsh wrens, and various herons). The other one-third of the funds was used to support waterfowl habitat research projects in Canada, mostly in Manitoba.

The private sector will have an even bigger role to play in the coming years, which will be fraught with politics, shifting priorities, and smaller state and federal agencies. Ducks Unlimited, Wetlands for Wildlife, Wisconsin Waterfowlers Association, and similar organizations may need to accelerate fund raising and cost-sharing programs if waterfowl are to remain a major resource in the state. Volunteerism on public lands will likely be increasingly vital if current habitat conditions are to be maintained.

Wild Turkey Management

The wild turkey population continued to grow in the state and was present in all 72 counties by 2005. (See details of this management success story in Chapter 11.) The spring hunt (April and May) consisted of six five-day hunting periods requiring special permits for taking a season limit of one bearded turkey (some females have beards). The fall hunt also required a permit, but the hunting period was about a month long, running from early October to early November.

The spring hunt normally accommodates about 150,000 hunters and a harvest of about 40,000 turkeys in six hunting periods, 43 turkey management zones, 12 state parks, and the Fort McCoy military reservation. The 2005 spring harvest was 46,183 taken by a record 193,826 permit holders. The fall harvest had been accommodating about 75,000 permits for the same zones and the Fort McCoy military reservation, but state parks were closed to turkey hunting. The 2005 fall turkey harvest was 10,650 for 85,678 permit holders.

The Wisconsin Chapter of the National Wild Turkey Federation and Wings Over Wisconsin organizations continued to provide substantial financial support for turkey research and management in the state. From $250,000 to $300,000 cost-sharing funds are provided by these sources each year. Additionally, each turkey hunter is required to purchase a turkey hunting stamp costing $5.25. Over $400,000 in annual turkey stamp revenue is generated from this source and is designated for habitat management and restoration, research, education, equipment, and overall administration of the turkey program.

Turkey habitat improvement primarily involves oak management implemented on the landscape though direct forestry practices on state-owned land or through

DNR FILE

Funds generated from turkey hunting stamps support habitat management and restoration, research, education, and equipment purchases.

recommendations to the private landowner by wildlife biologists and DNR foresters. Control of invasive species like box elder, black locust, buckthorn, and honeysuckle is also emphasized along with protecting oak stands from conversion to other hardwood communities because of its shade intolerance.

Turkey hunter education clinics conducted by DNR personnel and volunteer instructors continue to be offered each year. Several thousand participants get the chance to learn about turkey biology, habitat, population dynamics, hunting regulations, and hunting techniques. That training introduces a valuable dimension to the hunting experience and adds significantly to the participant's appreciation of the sport and the game being pursued. Fall and spring hunting remain quality events for those participating in the sport.

Pheasant Management

The ring-necked pheasant harvest averaged about 200,000 roosters annually throughout most of this period. About 50,000 adult males were released on public lands each fall, but budget restrictions reduced the numbers to 24,000 in 2003 and 19,000 in 2004. The DNR stocking program was complemented by an equal number of pheasants raised and released by about 65 sports clubs, including Wings Over Wisconsin and Pheasants Forever.

Experiments with Jilin Province (China) and Iowa wild strains for improving breeding stock have been ongoing since the late 1980s. Researchers assessed the pheasant population response to habitat changes in Dodge County in the 1990s and monitored pheasant populations in the Glacial Habitat Restoration Area, but no other pheasant research was underway at the time of this publication.

Pheasant management zones exist in all or a portion of 22 southern counties and six counties bordering the Mississippi River. Hunters are required to purchase a special pheasant stamp for hunting. Twenty-one wildlife areas are closed to pheasant hunting at 2 p.m. to allow unimpeded pheasant stocking. Hunters obtaining free tags from the DNR can also shoot hen pheasants along with roosters on nine public properties (areas where natural pheasant reproduction was very minimal).

A pheasant stamp ($7.25) was required for pheasant hunting anywhere in the state in 1992. The law changed in 1994 and required the stamp only in pheasant management counties. Revenue generated by the stamp was earmarked for the release of wild-strain pheasants and habitat management projects.

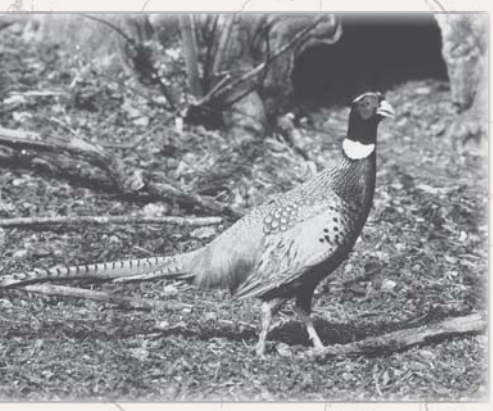
The stamp program has generated several million dollars for pheasant projects since that time. Pheasant hunter support of the stamp program has been steady because hunters know their money is actually spent on pheasant management. The DNR's 2005–07 budget bill increased the cost of the pheasant stamp to $10. The law also directed that 60% of the funds to be used only for stocking pheasants.

The Poynette Game Farm remains a vital part of the pheasant program. Game farm pheasants continue to be provided for public hunting grounds, sports clubs, field trials, dog training classes, and youth hunts. Although budget reductions reduced personnel and operating budgets, the game farm superintendent and game farm work crew continue to provide quality birds for these activities.

Pheasants Forever and the Wings Over Wisconsin membership has grown, and they have provided tremendous financial support to the pheasant program. Fund raising through annual banquets has produced over one million dollars for habitat projects in Wisconsin alone. Various chapters of both organizations work regularly with landowners both in habitat improvement projects and improving hunter-landowner relationships.

After 2000, Pheasants Forever deployed four pilot habitat teams to assist landowners with habitat assessment, management planning, site preparation, seed, prescribed burning, brush control, and a variety of other services. The project proved successful, and the service is now a permanent part of the program. Details can be obtained through their Web site, www.pheasantsforever.org.

Future DNR plans focus on expanding pheasant hunting opportunities while improving hunt quality and hunter satisfaction. Prairie ecosystem establishment and management, Conservation Reserve Program expansion and implementation, wetland



Pheasant stocking provides additional hunting opportunities at public hunting grounds in Wisconsin.

PHOTOS: DNR FILE

The Poynette Game Farm continues to be a central part of the DNR's pheasant program.

preservation and restoration, population monitoring, and population dynamics research will be major activities. Game farm pheasants will continue to be provided to public hunting grounds, sports clubs, dog training classes, dog trial organizations, and youth hunts.

Mourning Dove Hunting

The mourning dove is in the protected category of law within the federal Migratory Bird Treaty Act. This does not mean they cannot be hunted. It means they can only be hunted if a hunting option is offered by the FWS. While such an option existed each year for many years and 37 states had a dove season, Wisconsin did not. The fact that the dove is the "state bird of peace" probably dampened public interest in pursuing a hunting season in this state.

A coalition of dove hunting enthusiasts renewed the dove hunting issue, and the DNR proposed hunting regulations in 2000. The public reaction was mixed, but the anti-dove movement in the state attracted massive news media coverage, public petitions, billboards, and thousands of pro and con letters to the DNR and the Legislature. A showdown between the two factions occurred during the annual spring fish and game hearings in April 2000 when a 56-year hearing attendance record was set. Of the close to 30,000 in attendance, more than 27,000 voters supported establishing a mourning dove hunt.

However, in August 2001, the circuit court was petitioned by anti-dove hunting organizations, and the court issued an injunction suspending the DNR dove hunting regulations. The court's decision delayed the dove season until the issue could be debated in circuit court the following year. The DNR lost the dove season authority in court that year primarily because state statutes defined the bird as both "game" and "nongame." Because of this conflict, the court felt the dove's "bird of peace" status in the law had merit for protecting the species from hunting.

In early 2003, the DNR won its case for a dove hunting season in the court of appeals. However, the opponents took their case to the Supreme Court. DNR attorney Tim Andryk, in charge of wildlife-related law issues, successfully defended the mourning dove hunting season in the Supreme Court in June 2003. Andryk's very effective presentation won a 7–0 decision in favor of allowing the hunt to occur. Mourning dove hunting became a reality that fall.

Recent dove hunting seasons have not attracted much attention. The 60-day September through October season with a daily bag limit of 15 seems to be accepted by most hunters. DNR biologists began to band mourning doves in 2005 to get a better handle on local populations. The high dove population, low level of hunter participation (about 30,000 dove hunters), and lack of reported problems indicates the sport will likely be around for a long time.


DNR FILE

Muskrat Management

Almost without notice, the muskrat share-trapping program at the state-owned Horicon Marsh celebrated 50 years of success in 1993. Twenty trapping units enabled wildlife biologists to control and manipulate the muskrat population and effectively maintain open water areas for waterfowl. The low muskrat population combined with low fur prices produced a minimum harvest through 2005 in the neighborhood of less than 3,000 muskrats per year.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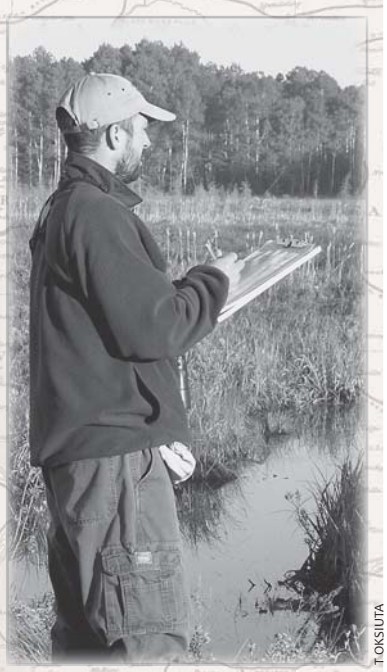
DNR FILE

Beaver lodge.

DNR FILE

Sharp-tailed grouse.



T. OKSIUTA

Ryan Brady surveying marshbirds.

Beaver Management

This wetland creature doesn't generate a lot of publicity, but wildlife biologists give it priority attention because of its impact on trout water, waterfowl habitat, wild rice beds, public roadways, and private property. The primary management activities are surveys, which are conducted on a three-year cycle, and developing specific population goals. The beaver is recognized as an important component of forest ecosystems, and balancing that value against its nuisance reputation will continue to challenge biologists in the future.

Sharp-tailed Grouse Management

The agency continues its fight to prevent sharp-tailed grouse from disappearing from the landscape. Managing lands in the northwest barrens, which is considered core range, receives priority. Identifying other range in central Wisconsin is planned. Habitat management consists of timber harvest and brush maintenance. A permit system regulates the annual hunting season that extends from mid-October to early November.

Captive Wildlife Management

Wildlife biologists had discussed wildlife disease and genetic impacts of deliberate and inadvertent release of captive birds and mammals for the past 20 years, but the discussion reached its peak in the 1990s. Dr. Sarah Shapiro Hurley—then on staff as a wildlife veterinarian—was in charge of a major overhaul of outdated captive wildlife laws. Deliberations took ten years before consensus was achieved on law principles.

DNR attorney Mike Lutz and warden Tom Solin actively participated on the project with Dr. Hurley, who put together a staff team of biologists and solicited regulation input from more than 50 license holders, 30 private organizations, and other state and federal agencies. Numerous drafts, controversial topics, difficult interagency communications, dealing with outspoken critics, more than 4,000 letters and telephone contacts, and more than 100 public meetings delayed final law proposals into the new millennium. Chronic wasting disease detection in the deer population stimulated passage of the new law by April 2002.

The law is too lengthy and complex to be presented comprehensively, but it committed the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and the DNR to coordinate wildlife health issues. It also clarified DATCP responsibilities to serve as the lead agency for receiving animal health certificates, issuing quarantine orders, and interacting with the public on animal health issues. The law includes the following key elements:

- Require health certificates for captive wild animals moving in interstate commerce
- Authorize the development (by administrative rule) of clear standards for humane care and housing of captive animals
- Minimize the privatization/commercialization of the public resource by requiring that wild animals held under license be purchased from captive bred stock rather than taken from the wild

Endangered Species Management

Wildlife biologists continued to support the Bureau of Endangered Resources program and provide the core field staff for a variety of activities, including surveys and management of bald eagle, ospreys, cormorants, frogs and toads, whooping cranes, herons, and whistling swans. Natural area habitat management for endangered, threatened, and special concern plant species received additional attention on more than 50 state wildlife areas. The Karner Blue Butterfly Habitat Conservation Plan now receives priority attention on all state wildlife areas. State wildlife grants (from federal sources) provide $1.5 million each year for Wisconsin management programs. Most of these funds are used to support endangered and nongame wildlife projects administered by

DNR's Bureau of Endangered Resources. (See Chapter 10 for details of the DNR's management of endangered and nongame species.)

International Migratory Bird Day was created in 2002. Bird interest is huge in the United States and in Wisconsin. Bald Eagle Days, Horicon Bird Day, annual sandhill crane counting, the Wisconsin Society of Ornithology's annual winter bird inventory, Audubon's Goose Pond events, and many other events are testimony to the popularity of this form of recreation. Surveys indicate Wisconsin is tied with Alaska as the most popular birding area in the United States.

A new effort entitled "Wisconsin Bird Conservation Initiative" (WBCI) was initiated on May 12, 2001, involving 60 state organizations. By 2005, the membership had doubled in size. Details of the program are presented at the end of Chapter 10 and described on the Web site www.partnersinflight.org. Wildlife Management Bureau director Tom Hauge was most proud of his bureau's support and participation in the WBCI program. He described it as "one of the most important project's of his time" and went on to say, "it is based on a solid planning foundation that will continue its effectiveness 50 years from now."

The Bureau of Wildlife Management hired wildlife biologist Andy Paulios in 2003 to work full time in coordinating WBCI activities. His coordinating duties include participating in WBCI meetings, identifying important bird areas on wildlife areas, communicating with wildlife managers and private partners in the program, and assisting in assessing various types of bird habitat to help local leaders make bird-friendly land-use decisions.

Conservation biologist Sue Foote Martin of the endangered resources staff led the creation of a program called the Great Wisconsin Birding and Nature Trail, which identifies the best birding and wildlife viewing sites in the state (a significant number were located on state wildlife areas). The program developed a set of highway-based viewing guides with maps and site descriptions for 368 viewing sites across five different regions of the state.

WBCI has also funded a project coordinator position to bring various federal and state organizations together including agricultural organizations, local service organizations, farmers, and the DNR to address large issues like the need for large open grasslands for prairie chickens or the need for ecological management of large landscapes like the Central Wisconsin Grasslands project.

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Wildlife biologist Andy Paulios.

DNR FILE

Into the Future

Restrictive governmental budgets nationwide became the norm in the new century, and Wisconsin was impacted like all other states. Wisconsin National Guard Reserve Units provided personnel and equipment for the Iraq War annually, disrupting families and draining tax dollars. A declining economy produced a sharp rise in unemployment in 2008, and forced General Motors to close its Janesville plant after 100 years of automobile manufacturing. The 2009 Legislature faced a $6 billion budget deficit for the next biennium, and state employees were required to take 16 days of unpaid furloughs to help with the shortfall.

The DNR gradually assumed a new look as the agency fine-tuned its organization to deal with fiscal constraint and program losses from lost federal and state revenue sources. The doors were closed to the public at numerous service centers around the state, and those that continued to be open cut back on days of service.

Meeting the challenges of the future will not be easy for the DNR nor will it be for any of its sister agencies in the United States. Global climate change strategies no doubt will require all of us to adjust in some way, and conservation programs will need to be reshaped to address new standards designed for our survival as a planet. It's anybody's guess as to what the outcome will be, but one fact is increasingly clear: natural resources conservation is no longer optional.